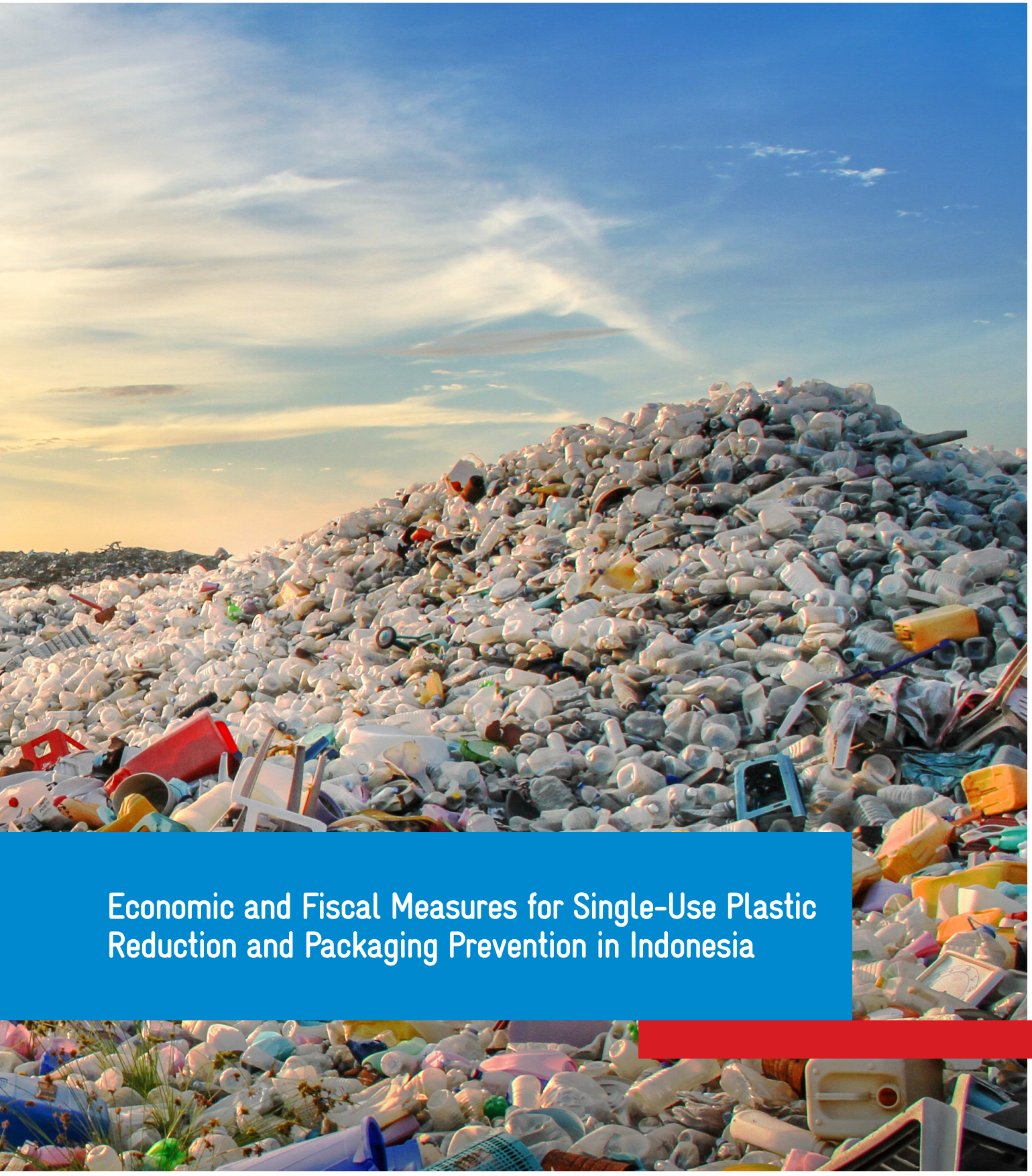

Economic and Fiscal Measures for Single-Use Plastic Reduction and Packaging Prevention in Indonesia

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of:

Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection

of the Federal Republic of Germany

ENVIRONMENTAL PROTECTION made in Germany

Economic and Fiscal Measures for Single-Use Plastic Reduction and Packaging Prevention in Indonesia

Prepared for the Collaborative Action for Single-Use Plastic Prevention in Southeast Asia (CAP SEA) Project

Implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

With the funding support from

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ENVIRONMENTAL made PROTECTION in Germany

By **Gan Gan Dirgantara**

February 2023

FOREWORD

The global project Export Initiative Environmental Protection, funded by the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV), aims to create sustainable and favourable conditions for introducing resource-efficient, climate-friendly, and innovative technologies in its target countries. For the regional project "The Collaborative Actions for Single-Use Plastic Prevention in Southeast Asia" (CAP SEA), the module aims to reduce disposable plastic waste by focusing on prevention and reuse. To achieve this, CAP SEA provides policy advice to stimulate a recycling economy, capacity development for key stakeholders, local pilot activities, and support for innovative business models for SUP prevention.

Since 2017, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH has supported the BMUV initiative by providing advisory services and coordinating activities to support the development of framework conditions that enable the introduction of environmental approaches and technologies in partner countries. The project measures are implemented in collaboration with bilateral projects of German technical cooperation in seven countries (Egypt, India, Indonesia, Malaysia, Jordan, Thailand, and Ukraine) but also in global modules. Locally deployed staff form the point of contact for other ongoing projects carried out by BMUV grant recipients in these countries. This promotes the regular exchange of information and experiences between the projects and creates synergies. In addition, the projects are better embedded in the strategies of the target countries.

The supported measures build up technical and institutional know-how and foster knowledge and technology transfer, raise environmental awareness, and build capacities, thereby contributing to the transition to more circular economies and the achievement of specific sustainable development goals (SDGs).

General information about the project module in South-East Asia: Indonesia

In Indonesia, CAP SEA aims to contribute to the achievement of targets stated in The National Action Plan on Marine Plastic Debris (2018-2025), that is,

The reduction of plastic waste by 70% by 2025 compared to 2017

The Roadmap to Waste Reduction by Producers (through the Ministry of Environment Forestry (MoEF) Regulation P.75/2019)

The reduction of packaging waste from producers by 30% by 2029. In addition to that, CAP SEA actively participates in The Indonesian National Plastic Action Partnership (NPAP), a platform for public-private collaboration that intends to:

1. Reduce avoidable plastic use and reduce plastic consumption by 540,000 tonnes/year by 2025 (6% of projected plastic waste generation in 2025) through policy and behavioural changes and new business models
2. Substitute 740,000 tonnes/year of plastics with alternative materials (8% of projected plastic waste generation in 2025)
3. Collect, safely dispose and recycle unavoidable plastics with the goal of making all plastic waste a valuable commodity.

"Single-Use Plastics", which are often referred to as disposable plastics, are commonly used for plastic packaging and are intended to be used only once before they are thrown away or recycled. These include, among other items, grocery bags, food packaging, bottles, straws, containers, cups, and cutlery. (Reference: United Nations Environment Programme, UNEP (2018): Single-Use Plastics: A Roadmap for Sustainability)

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ABBREVIATIONS

ADF	Advance Disposal Fee
ASEAN	Association of Southeast Asia Nations
BAPPENAS	Badan Perencanaan Pembangunan Nasional or The Ministry of National Development Planning
BMUV	The German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection
BPDLH	*Badan Pengelolaan Dana Lingkungan Hidup* or Environmental Fund Management Agency
BPF	British Plastic Federation
BPOM	*Badan Pengawas Obat dan Makanan* or National Food and Drug Authority
BPS	*Badan Pusat Statistik* or Central Bureau of Statistic
BRIC	Brazil, Russia, India, China
CAPSEA	Collaborative Action for Single-Use Plastic Prevention in Southeast Asia
CO_2e	Carbon dioxide equivalent
CMMAI	Coordinating Ministry of Maritime Affairs and Investment
CSR	Corporate Social Responsibility
DRS	Deposit Return System
EPS	Expanded Polystyrene
EPR	Extended Producer Responsibility
EU	European Union
EXI	Export Initiative
FI	Financial Institution
F&B	Food and Beverage
FMCG	Fast-moving Consumer Goods
GCF	Green Climate Fund
GESAMP	Group of Experts on the Scientific Aspects of Marine Environmental Protection
GHG	Greenhouse Gas
GIZ	The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
GMP	Good Manufacturing Process
GoI	Government of Indonesia
GPP	Green Public Procurement
HDPE	High Density Polyethylene
HI	High income
IFI	International Financial Institution
IKI	Internationale Klimaschutzinitiative
INAPLAS	Indonesian Olefin, Aromatic and Plastic Association
IPF	Indonesian Packaging Federation
LDPE	Low Density Polyethylene
LI	Low income
LKPP	*Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah* or National Public Procurement Agency

LMI	Lower middle income
OJK	*Otoritas Jasa Keuangan* or Financial Services Authority
MDB	Multilateral Development Bank
MMT	Million Metric Tons
MoEF	Ministry of Environment and Forestry
MoF	Ministry of Finance
MoHA	Ministry of Home Affairs
MoI	Ministry of Industry
MRV	Measurement Reporting and Verification
NGO	Non-Government Organization
NPAP	National Plastic Action Plan
PC	Polycarbonate
PET	Polyethylene Terephthalate
PHA	Polyhydroxyalkanoates
PLA	Polylactic acid
PP	Polypropylene
PPP	Public Private Partnership
PS	Polystyrene
PSEL	Processing waste into electrical energy
PUR	Polyurethane
PVC	Polyvinyl-chloride
RDF	Refused Derived Fuel
RIPIN	*Rencana Induk Pengembangan Industri Nasional* or National Industrial Development Master Plan
SCS	System Change Scenario
SDG	Sustainable Development Goal
SEA	Southeast Asia
SNI	Standar Nasional Indonesia
SOE	State-Owned Enterprise
SUP	Single-Use Plastic
SVLK	Sistem Verifikasi Legalitas Kayu or Timber Legality Assurance System
SWOT	Strengths Weaknesses Opportunities Threats
TPS3R	*Tempat Pengelolaan Sampah* Reuse, Reduce & Recycle
UF	Ureaformaldehyde
UK	United Kingdom
UMI	Upper Middle Income
UNEP	United Nations Environment Program
USA	United States of America
UV	Ultraviolet
VAT	Value Added Tax
VGF	Viability Gap Fund
WRI	World Resources Institute

EXECUTIVE SUMMARY

Plastic is an important material for human beings, and it is widely used to fulfil various needs of human life throughout the world. However, plastics also cause environmental problems, especially with regard to the widespread use of single-use plastics (SUPs). The environmental impact of SUP goods is multi-layered, ranging from the emissions due to their production from petrochemical derivatives to waste generation.

Plastic pollution, especially by SUP, is a serious problem worldwide and it also affects Indonesia. To support the Government of Indonesia in addressing plastic waste problems, *The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH* (GIZ), which is supported by The German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV), has set up a programme entitled 'Collaborative Actions for Single-Use Plastic Prevention in Southeast Asia' (CAP SEA). The programme aims to reduce SUP waste with a clear focus on upstream strategies of prevention and preparation for reuse and recycling. It also fosters public-private sector partnerships to prevent single SUP in line with partner government's plastic waste reduction policies.

One activity in the CAP SEA programme in Indonesia is the establishment of a regulatory framework to implement potential economic and fiscal measures for SUP reduction, packaging prevention, and reducing packaging waste in Indonesia. The scope of this activity includes:

- Identifying and proposing a longlist of possible economic and fiscal measures/measures to be analysed at the beginning of the project;
- Selecting potential options of economic and fiscal measures/measures to address the objectives;
- Conducting SWOT analyses (Strengths, Weaknesses, Opportunities, Threats) for the selected potential economic and fiscal measures/measures in the context of Indonesia; and
- Developing policy recommendations for economic and fiscal measures for SUP reduction and packaging prevention.

The method used for conducting the activity is described in the following figure.

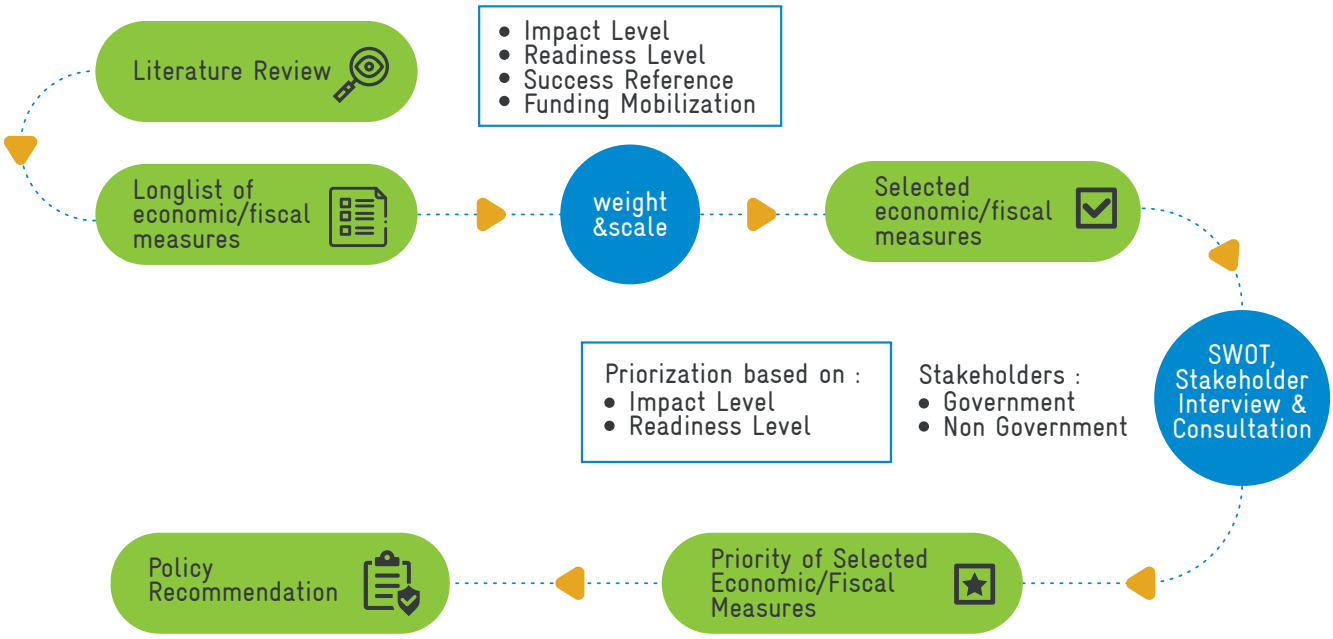

Figure 1. Method used for conducting activity

Various economic and fiscal measures or measures that can be applied for SUP reduction and packaging prevention consists of:

Table 1. Possible Economic and Fiscal Measures

1.	Tax on virgin raw materials.	10.	Deposit return system.
2.	SUP packaging levies.	11.	Extended producer responsibility.
3.	Plastic credits.	12.	Waste charge.
4.	Tax incentives for recycling investment.	13.	Guarantee facility for recycling investment.
5.	Green public procurement.	14.	Interest subsidy and soft loan for recycling investment.
6.	Tax on non-recyclable plastic.	15.	Interest subsidy and low-cost financing for new technology import.
7.	Tax deduction for the use of recyclable plastic materials.	16.	Partial grant for recycling investment.
8.	Tax incentives for using reusable and recycled content packaging.	17.	Result-based SUP performance fiscal transfer to local governments.
9.	Consumer rebate.	18.	Waste bank incentive.

Those measures can be applied at various stages of the plastic life cycle, as can be seen in the figure below

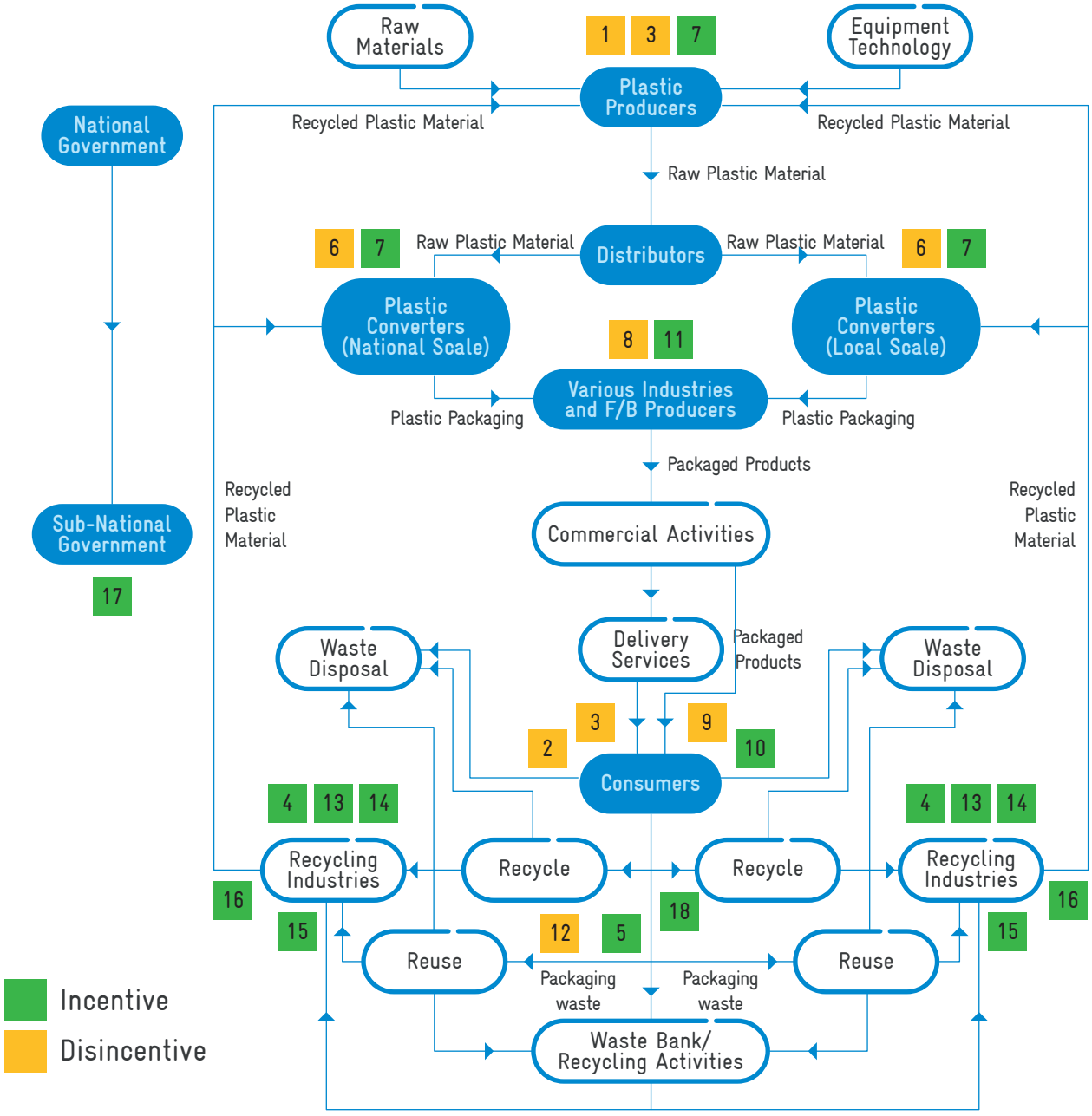

Figure 2. Mapping of Possible Economic and Fiscal Measures Based on the Plastic Life Cycle

Notes

- **Raw materials** consist of
  (i) imported virgin materials
  (ii) domestic virgin materials
  (iii) imported recycled materials and
  (iv) domestic recycled materials.

- **Equipment and technology** consist of
  (i) imported equipment and technology and
  (ii) domestic equipment and technology.

- **Plastic Producers**: Entities who produce plastic (monomer and polymer).
- **Plastic Converters**: Entities who produce goods made from plastic including packaging producers.
- **Various Industries and F & B Producers**: Entities who use plastic to package their products.
- **Commercial Activities**: Entities who sell packaged products to customers directly or via delivery services.
- **Delivery services**: Entities who deliver goods purchased via online market.

By applying the following four criteria: (i) potential impact level, (ii) potential readiness level, (iii) success reference in other countries or in other sectors, and (iv) potential for mobilising government and non-government funding sources, the longlist of measures is shortlisted to ten potential economic and fiscal measures below:

1. Partial grants for recycling investments
2. Tax incentives for recycling investments
3. Interest subsidies and soft loans for recycling investments
4. SUP packaging levies
5. Tax deduction for the use of recyclable plastic material
6. Tax deduction for using reusable and recycled content packaging
7. Consumer rebate
8. Extended producer responsibility
9. Deposit return system
10. Green public procurement

These ten potential measures were assessed by a SWOT analysis and further discussed in the context of a series of stakeholder consultations of government and non-government representatives. To prioritise those measures, an analysis was carried out based on the assessment of two aspects with the same weighting: the readiness level of the measure application and the impact level that might be achieved by implementing the measure. The explanation for the scores given in both aspects is described in the table below:

Table 2. Explanation of Scoring in Readiness Level and Impact Level

SCORE	READINESS LEVEL	IMPACT LEVEL
1.	The measure is estimated to be ready for implementation in the long term (10 years) as it requires very complex preparatory work.	The application of the measure is estimated to have a very low impact in terms of packaging and single-use plastic prevention.
2.	The measure is estimated to be ready for implementation in the medium term (5 years) as it requires complex preparatory work.	The application of the measure is estimated to have a low impact in terms of packaging and single-use plastic prevention.
3.	The measure is expected to be ready for implementation in the short term (1-2 years) but requires excessive preparatory work.	The application of the measure is estimated to have a medium impact in terms of packaging and single-use plastic prevention.
4.	The measure is expected to be applicable within the short term (1-2 years) by preparing several requirements categorised as moderate.	The application of the measure is estimated to have a high impact in terms of packaging and single-use plastic prevention.
5.	The measure is expected to be ready for implementation within the short term (1-2 years) with light and simple preparatory work.	The application of the measure is estimated to have a very high impact in terms of packaging and single-use plastic prevention.

The assessment of each measure in both aspects is carried out by considering relevant stakeholder consultations and discussions with experts who have various expertise and experience. Based on those consultations and discussions, the assessment given to each measure is as follows:

Table 3. Assessment of Each Measure Based on Readiness Level and Impact Level

NO	MEASURE	SCORE FOR READINESS LEVEL	SCORE FOR IMPACT LEVEL
1	Partial Grant for Recycling Investment	5	3
2	Tax Incentive for Recycling Investment	3	3
3	Interest Subsidy and Soft-loan for Recycling Investment	3	3
4	SUP Packaging Levies	2	4
5	Tax Deduction for the Use of Recyclable Plastic Materials	3	3
6	Tax Deduction for Using Reusable and Recycled Content Packaging	3	4
7	Consumer Rebate	3	3
8	Extended Producer Responsibility	2	3
9	Deposit Return System	4	3
10	Green Public Procurement	4	4

An overview of the position of each measure relative to others can be seen in the figure below.

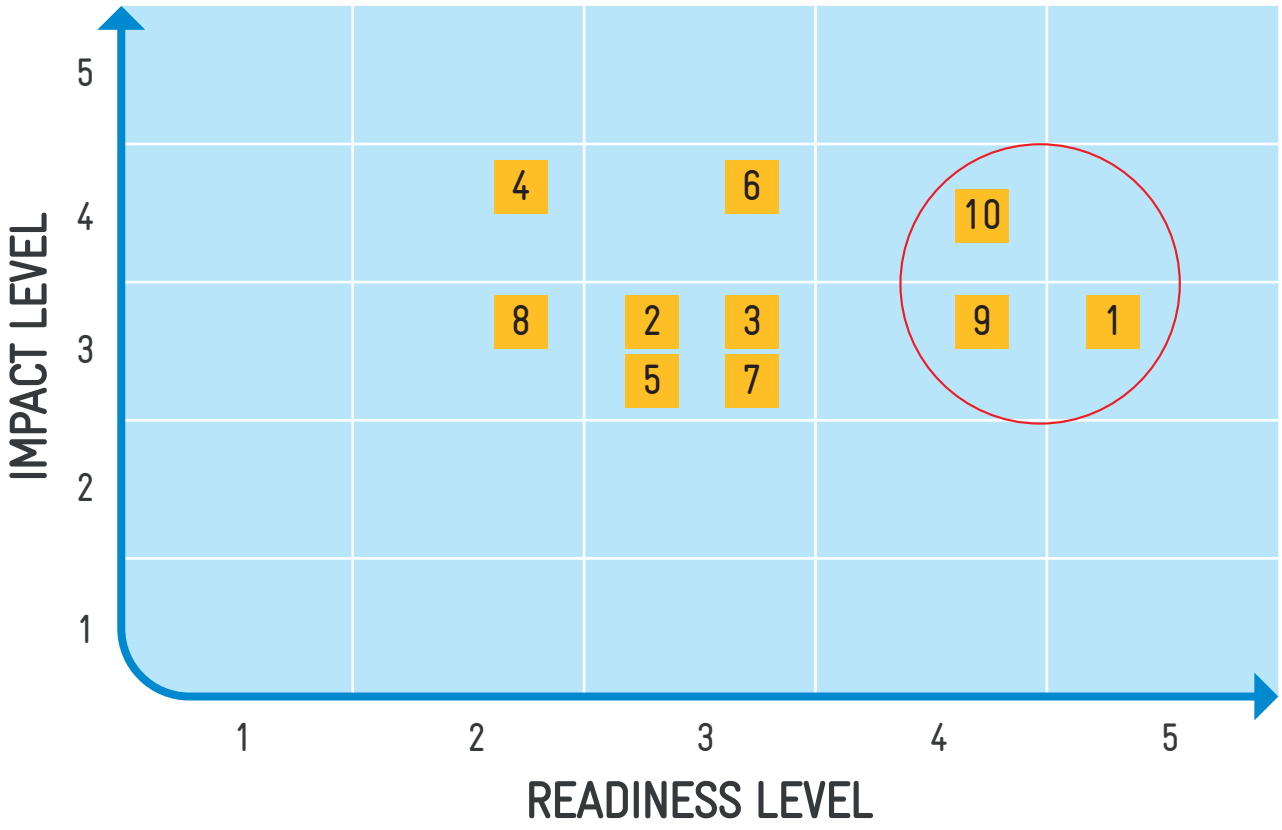

Figure 3. Position of Each Measure Based on Readiness Level and Impact Level

Based on the figure above, it can be concluded that based on their readiness and impact level, the following three measures can be prioritised:

1. Measure No. 1: Partial Grants for Recycling Investments
2. Measure No. 9: Deposit Return System
3. Measure No.10: Green Public Procurement

Chapter 01. Introduction

1.1 Background

Plastic is an important material for human beings. Based on Cornago, et al. (2021), plastics have many beneficial characteristics due to their lightness, resistance, durability, and cost, among other desirable qualities. Plastic and plastic products have become an integral part of modern society since the beginning of mass production in the 1950s (Beaumont et al., 2019 in Molloy et al., 2022). To date, plastics are widely used to fulfil various needs of human life worldwide.

However, plastics also cause environmental problems, especially in the context of unmanaged plastic waste. Excessive production and non-conforming waste management practices have made plastic an omnipresent pollutant in terrestrial and marine environments (Geyer et al., 2017; Pettipas et al., 2016; Xanthos and Walker, 2017 in Molloy et al., 2022). One of the main causes of the large amount of plastic waste is the widespread use of single-use plastics (SUPs).

SUPs are typically used only once before being disposed of as waste (UN Environment, 2018). Applications of SUPs include consumer goods (e.g., carrier bags, toiletry items), packaging items (e.g., food containers), as well as inputs in the medical (e.g., blood bags, syringes) and agricultural (e.g., grain bags) sectors (Cornago, et.al., 2021). The design of SUPs might encourage most consumers to randomly throw it away, which has led to the accumulation of disposable plastic waste (Van et al., 2021).

The environmental impact of single-use plastic goods is multifaceted, ranging from the emissions due to their production from petrochemical derivatives to waste generation. Additionally, the impact of single-use plastic waste differs depending on whether plastics are gathered and treated through formal waste management practices (e.g., through recycling, incineration with or without energy recovery or landfilling) or thrown away, on land or in the ocean, intentionally or unintentionally, dumped or illegally incinerated.

Like many countries in the world, Indonesia faces a mounting plastic pollution crisis. Plastics are valued materials with a key role in the economy, and the nation generates around 6.8 million tonnes of plastic waste per year, a figure that is growing by 5% annually. Despite major commitments from the government, industry and civil society, the amount of plastic waste that is dumped into various water bodies across the country is projected to grow by 30% between 2017 and 2025, from 620,000 tonnes per year to an estimated 780,000 tonnes per year (NPAP, 2020; World Economic Forum, 2020).

Issues related to SUP have attracted the attention of many parties, including The German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV). One of BMUV's efforts to address the SUP problem is through a global programme entitled Export Initiative Environmental Protection (ExI)[1] implemented by The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ). In its ASEAN component, the ExI fosters public-private sector partnerships with the aim to prevent SUP in line with the partner governments'[2] plastic waste reduction policies. The ExI component in Southeast Asia (SEA) is called 'Collaborative Action for Single-Use Plastic Prevention in Southeast Asia' (CAP SEA). The project aims at reducing SUP waste with a clear focus on upstream strategies of prevention and preparation for reuse.

The implementation of the CAP SEA Project is a part of the BMUV's support to the Government of Indonesia (GoI). The BMUV has cooperated with the GoI since 2009 on the implementation of various projects in different aspects[3] :

1. Climate change policy
2. Climate mitigation in land-based sectors
3. Climate mitigation in energy and transport sectors
4. Climate adaptation, and biodiversity conservation.

The CAP SEA project component in Indonesia aims at contributing to the reduction of SUP generation through innovative business models and capacity development. CAP SEA also strives to support Indonesia's effort to advance environmental and climate protection to meet international obligations such as the Paris Agreement and the Agenda 2030 for Sustainable Development. The project contributes directly to the United Nations' Sustainable Development Goals to promote a sustainable industrialisation and innovation (SDG 9), to design sustainable cities and settlements (SDG 11), to ensure sustainable production and consumption patterns (SDG 12), to support measures to combat climate change (SDG 13), to protect the oceans, seas, and marine resources (SDG 14), and to fostering global partnerships to achieve these goals (SDG 17). Furthermore, the Project could also contribute to the waste management sector in Indonesia, particularly by supporting the implementation of Presidential Regulation No 83/2018 concerning the National Action Plan on Marine Debris Management.

Based on the project proposal, the expected impact of the project in Indonesia is the reduction of the use of short-lived, light polymer-based packaging materials and disposable products and the resulting plastic streams into the environment. Two outcomes are expected as a result: (i) Business strategies for SUP prevention and reuse are developed and tested, and (ii) decision makers make informed policy decisions on SUP prevention and plastic waste reduction.

[1] *The Export Initiative Environmental Protection (ExI) is a BMUV funded global programme. Its objective is to promote green technology and know-how transfer to support sustainable development worldwide.*
[2] *Partner countries of the EXI project in Southeast Asia are Malaysia, Thailand, the Philippines, and Indonesia.*
[3] *As of September 2022, 53 projects that were supported by the IKI Fund have been implemented in Indonesia, namely 14 bilateral projects, 12 regional projects, and 27 global projects. These projects were implemented by 25 implementing organisations of IKI Fund recipients.*

1.2 Objective

CAP SEA Indonesia consists of four work packages, of which work package 1 is to contribute to a Circular Economy Policy Framework. One activity in this work package is aimed at supporting regulatory options, implementing economic and fiscal measures for SUP reduction, packaging prevention, and reducing packaging waste in Indonesia. The overall objective of the activity is to contribute to the development of a circular economy policy framework specifically for packaging and plastics. The specific objectives of the assignment are as follows:

a) Analysing regulatory options, economic and fiscal measures for reducing the consumption of packaging in Indonesia.

b) Analysing regulatory options, economic and fiscal measures for improving the recycling of plastic and packaging waste in Indonesia.

c) Developing policy paper recommendations for a circular economy action plan on SUP reduction and packaging prevention.

1.3 Scope and Method

The scope of this activity included:

- Identifying and proposing a longlist of possible economic and fiscal measures/measures to be analysed at the beginning of the project;
- Selecting potential options of economic and fiscal measures/measures to address the objectives;
- Conducting SWOT analyses (Strengths, Weaknesses, Opportunities, Threats) for the selected potential economic and fiscal measures/measures in the context of Indonesia; and
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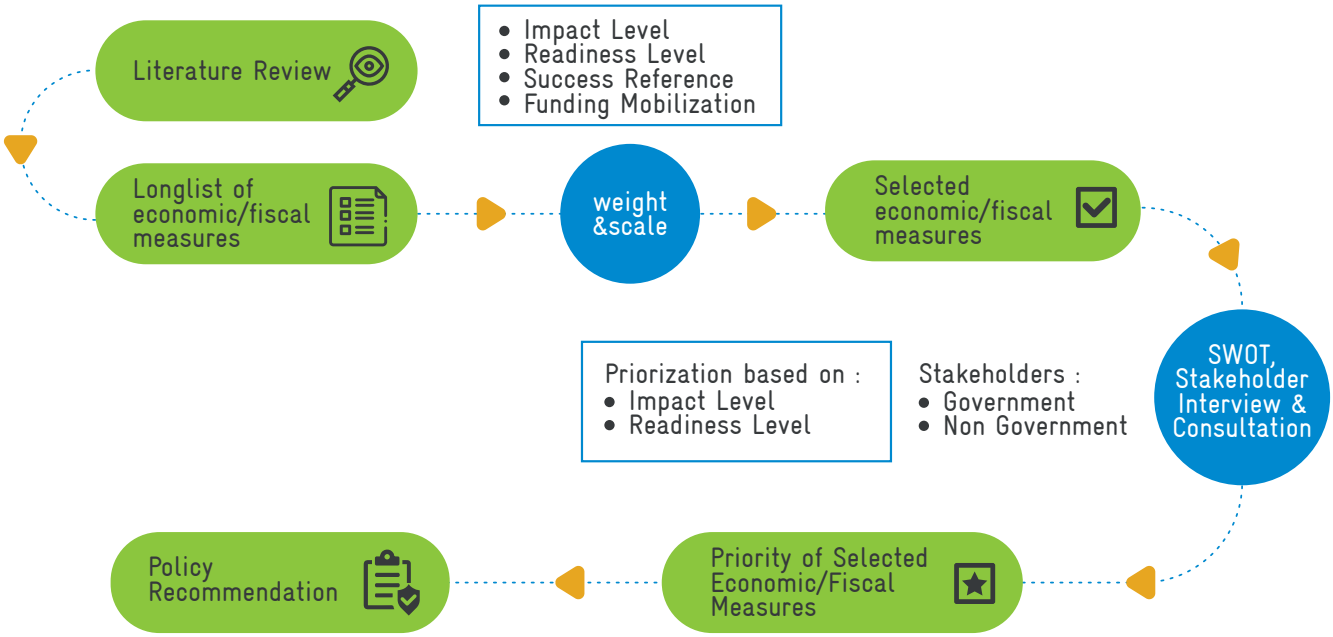


Figure 1-1. Method used for conducting activity

As described in Figure 1-1, the study will start with a literature review on the plastic industry and plastic use development, single use plastic issues, waste management with focus on plastic waste, and incentive and disincentive systems to address environmental problems, particularly through economic and fiscal measures. Based on the literature review, a longlist of economic and fiscal measures that could contribute to single use plastic reduction and packaging prevention, will be identified. Furthermore, the longlist will be shortlisted to ten potential economic and fiscal measures using the following four criteria:

(i) Potential impact level,
(ii) Potential readiness level,
(iii) Success reference in other countries or in other sectors, and
(iv) Potential for mobilising government and non-government funding sources.

These ten potential measures will then be assessed by a SWOT analysis and further discussed in the context of stakeholder consultations. Stakeholders are categorised into relevant government officials at national and sub-national level and non-government stakeholders including private business entities, researchers, legal experts, and civil society organisations. Based on the analysis, priority economic and fiscal measures can be identified by considering the impact level and readiness level of each measure.

The assessment of the impact level is carried out by considering among others:

(i) The estimated influence of SUP and packaging prevention at different stages (reduce, reuse, recycle) including the impact on greenhouse gas (GHG) reduction,
(ii) The estimated influence to encourage stakeholders at upstream of plastic lifecycle,
(iii) Estimated influence with regard to encouraging stakeholders downstream of the plastic lifecycle,
(iv) The estimated impact on the development of plastic and recycling industries,
(v) The estimated impact on addressing waste management in general, and
(vi) The estimated implementation in the coverage area. Meanwhile, the assessment of the readiness level is conducted by taking into account the different means of implementation of each measure including existing policies and regulations, institutional capacity, human resources capacity, supporting infrastructures availability, budget availability, and the complexity of preparation and implementation.

Finally, a policy recommendation concerning the potential implementation of selected economic and fiscal measures for single-use plastic reduction and packaging prevention is developed.

Chapter 2. Plastic Packaging and Waste Landscape in Indonesia

2.1 Single-Use Plastic and Packaging

According to the European Union Commission (2021), plastic is defined as a material consisting of a polymer to which additives or other substances may have been added, and which can function as a main structural component of final products, with the exception of natural polymers that have not been chemically modified. Polymers are composed of monomers bound by chemical bonds (Waste management information, 2004). Plastic is an organic material that can be formed into various shapes when exposed to heat and pressure. It can take the form of bars, sheets, or blocks; whereas plastic products include bottles, food wrappers, pipes, tableware, and others. In general, plastics are characterised by a low density, insulation against electricity, varying mechanical strength, limited temperature resistance, and a varying chemical resistance.

Single-use plastics are made from fossil fuel-based chemicals (petrochemicals) and are intended to be disposed of immediately after use. Unlike metals, plastics do not rust or corrode. Most plastics are not biodegradable but photo-degradable, meaning that they slowly break down into small fragments known as micro plastics (Clapp dan Swanston, 2009). The fragmentation of large plastic items into micro plastics is common on land, i.e., on beaches because of high UV irradiation and the abrasion of waves, while the degradation process is much slower in the ocean due to cooler temperatures and reduced UV exposure (GESAMP, 2015). According to Watson et al. (2021), single-use plastics are products made entirely or partly from plastic and are not conceived, designed, or placed on the market to accomplish multiple trips or rotations within their lifespan by being returned to a producer for refill or reuse for the same purpose for which they were conceived (EU 2019/904).

According to Montalvo & Olivares (2020), SUPs include two types of polymers—thermoplastics and thermosets—whose main difference lies in their malleability when subjected to heat. Thermoplastics can be melted down and reshaped after setting, in contrast to thermoset plastics that can only be shaped once. The most common single-use plastic waste items are thermoplastic polymers, such as Polyethylene Terephthalate (PET), Polypropylene (PP), Low Density Polyethylene (LDPE), High Density Polyethylene (HDPE), Polystyrene (PS), Expanded Polystyrene (EPS), Polyvinyl-chloride (PVC), Polycarbonate (PC), Polylactic acid (PLA), and Polyhydroxyalkanoates (PHA). Thermosets undergo a chemical change when heated and form a three-dimensional network. After being heated and formed, these plastics cannot be re-melted and reformed. The most common thermosets are: Polyurethane (PUR), Phenolic resins, Epoxy resins, Silicone, Vinyl ester, acrylic resins, and Ureaformaldehyde (UF) resins.

SUPs are widely applied in various products used in human life such as cutlery, cotton buds, plates, and different types of packaging. The main polymers used in the production of single-use plastics are:

1. **LDPE**: Bags, trays, containers, food packaging film
2. **HDPE**: Milk bottles, freezer bags, shampoo bottles, ice cream containers
3. **PET**: Bottles for water and other drinks, dispensing containers for cleaning fluids, biscuit trays
4. **PS**: Cutlery, plates, and cups
5. **EPS**: Hot drink cups, insulated food packaging, protective packaging for fragile items
6. **PP**: Microwave dishes, ice cream tubs, potato chip bags, bottle caps

As mentioned by various researchers, the use of plastic in the world has grown rapidly since the middle of the 20th century. This has had different implications for the development of the plastic industry, resulting in various types of products. Since then, more than nine billion metric tons of plastic materials have been produced worldwide, with plastics becoming a ubiquitous part of human life. The global plastic market was valued at 580 billion USD in 2020 and is expected to experience considerable growth over the next decade (Tiseo (2021) in Statista.com (2022)).

The Indonesian Olefin, Aromatic and Plastic Association (INAPLAS) stated that the national plastic consumption growth in 2019 amounted to 6%[4]. According to the BPF Report (2015), the plastic consumption in Indonesia is around 17 kg/capita/year[5]. Since 2018, Indonesia has also become a net importer of plastic waste, which adds some 220,000 tonnes from abroad to the amount of domestic plastic waste (World Economic Forum, 2020).

Based on the National Industrial Development Master Plan (RIPIN) 2015–2035, the Ministry of Industry noted that there are 925 companies that produce various kinds of plastic products and employ 37,327 workers. According to INAPLAS, the consumption of plastic is forecast to reach 6.2 million tons by 2020, or up to 5% compared to 2019. Flexible plastic shopping bags and packaging products play a major role here, as the account for 60% of plastic products. In terms of sub-national regions, the biggest plastic consumer today is West Java (40%), while Central Java and East Java are responsible for 50%. The remaining 10% is spread over various areas in Sumatra and other islands.

Plastic industries distribute their products to various parties such as supermarkets, consumers, and other industries that use plastics for packaging. There are also industries that process their own plastic to be used as packaging for their products. The product will then be distributed to sellers and consumers. Once the product has been consumed, the (SUP) packaging of the product is usually thrown away.

[1] *The assumption is that the national plastic consumption is around 1% above the annual economic growth, while the 2019 economic growth is predicted to reach 5.3% in the preparation of the 2019 State Budget.*
[2] *Based on the same data: Malaysia (35 kg/capita/year), Thailand and Singapore (40 kg/capita/year), and Western Europe (100 kg/capita/year).*

In Indonesia, the plastic packaging industry plays an important role in the supply chains of strategic sectors such as food and beverage, pharmacy, cosmetics, and electronics. The packaging of a product does not only protect the product, but it also gives the product an identity that distinguishes it from other products. Packaging is one of the main attractions for consumers and it can even be the reason why a consumer decides to buy the product. In other words, packaging is an important factor in selling a product. Attractive packaging with a unique design, the right size, distinctive colour and shape influences consumers in making product choices. The packaging business in Indonesia continues to grow and there are more and more business actors in this field. The world community is also increasingly interested in Indonesian product packaging, especially in the Asian region. Indonesian packaging companies have won many international competitions in their fields. Referring to data from the Indonesia Packaging Federation (2020), the Ministry of Industry (2020) has announced that the performance of the Indonesian packaging industry is projected to grow by around 6%in 2020 from 98.8 trillion IDR in 2019. In terms of material, flexible packaging accounts for 44% of the packaging circulated, rigid plastic packaging accounts for 14% for and paperboard packaging accounts for 28% for.

2.2 Plastic Waste

Plastic pollution is a major environmental issue that has recently become a growing international concern. The global pressure is increasing, especially since shocking images of plastic pollution in rivers and the ocean have reached mainstream media and social networks. According to UNEP (2018), it was recorded that from nine billion tons of plastic produced worldwide, only 9% had been recycled. The majority ended up in the ocean, landfills, dumps or were incinerated.

According to Abril Ortiz et al., in Knoblauch & Mederake (2021), SUPs have certain characteristics that make their end-of-life treatment challenging:
(i) they are meant to be disposed,
(ii) they are mostly difficult to recycle; and
(iii) are often made of low-density polymers so they float and might end up in the ocean.

Most SUPs are not biodegradable, or they degrade very slowly in the environment and need a long time to decompose. Due to the non-biodegradability of SUPs in nature, they usually end up as litter or in landfills in nature which is harmful to the ecosystem (Van et al, 2021). SUPs constitute approximately 50% of the global plastic waste generation. Their use in consumer goods and packaging has been the focus of recent waste prevention policies due to the sheer volume of waste generated and the frequency with which these materials are littered. (Cornago et al., 2021).

In 2015, plastic packaging constituted 141 million tonnes of waste, corresponding to 46.7% of global plastic waste generation. In addition, plastics were responsible for roughly 1.7 gigatonnes

[CO_2e] of global greenhouse gas emissions in 2015 (Cornago et al., 2021). However, the environmental impact of plastic waste depends on whether it undergoes formal waste management (e.g., through reuse, recycling, incineration, or landfilling) or whether it is illegally incinerated, littered or dumped, potentially resulting in air, soil and water pollution.

Indonesia generates 6.8 million tonnes of plastic waste each year, of which around 4.8 million tonnes are mismanaged and approximately 620,000 tonnes per year leak into waterways and the ocean. Without a major intervention, plastic pollution, including ocean leakage, will increase by 30% by 2025 and more than double by 2040 (NPAP Indonesia 2020)[6].

The amount of waste generation in Indonesia is strongly influenced by population growth. According to Indonesian Environmental Statistics, Indonesia's population amounted to 270 million people in 2020, with an average growth rate of 1.25% per year between 2010 and 2020. Meanwhile, according to the 2015–2045 Indonesian Population Projection published by BPS, the proportion of the population living in urban areas is expected to reach 72.9% by 2045.

Based on the plastic life cycle (figure 2–1), the system consists of several interrelated subsystems, namely:

1. Primary raw material subsystem: the preparation of primary raw materials from petroleum
2. Production process subsystem: the manufacture and processing of plastics
3. Plastic waste management subsystem: the collection and transportation of plastic waste and the final disposal process
4. Plastic recycling subsystem: the collection of plastic waste that can be recycled by plastic waste scavengers, sorting, grinding, washing, and drying of plastic waste, which is then sent to plastic factories as secondary raw material.

[6] *The NPAP system model estimates that 620,000 tonnes of plastic entered Indonesia's waters in 2017. Most plastics are not treated by a managed waste system after being used (4.2 million tonnes, or 61% of plastic waste). This leaves households and small businesses with no other option than to dispose of them in an environmentally harmful way: 78% of uncollected plastic waste is burned by households, often close to homes, 12% of it is discarded into bodies of water and 10% is dumped on land or buried and can then end up in bodies of water through rainwater runoffs.*

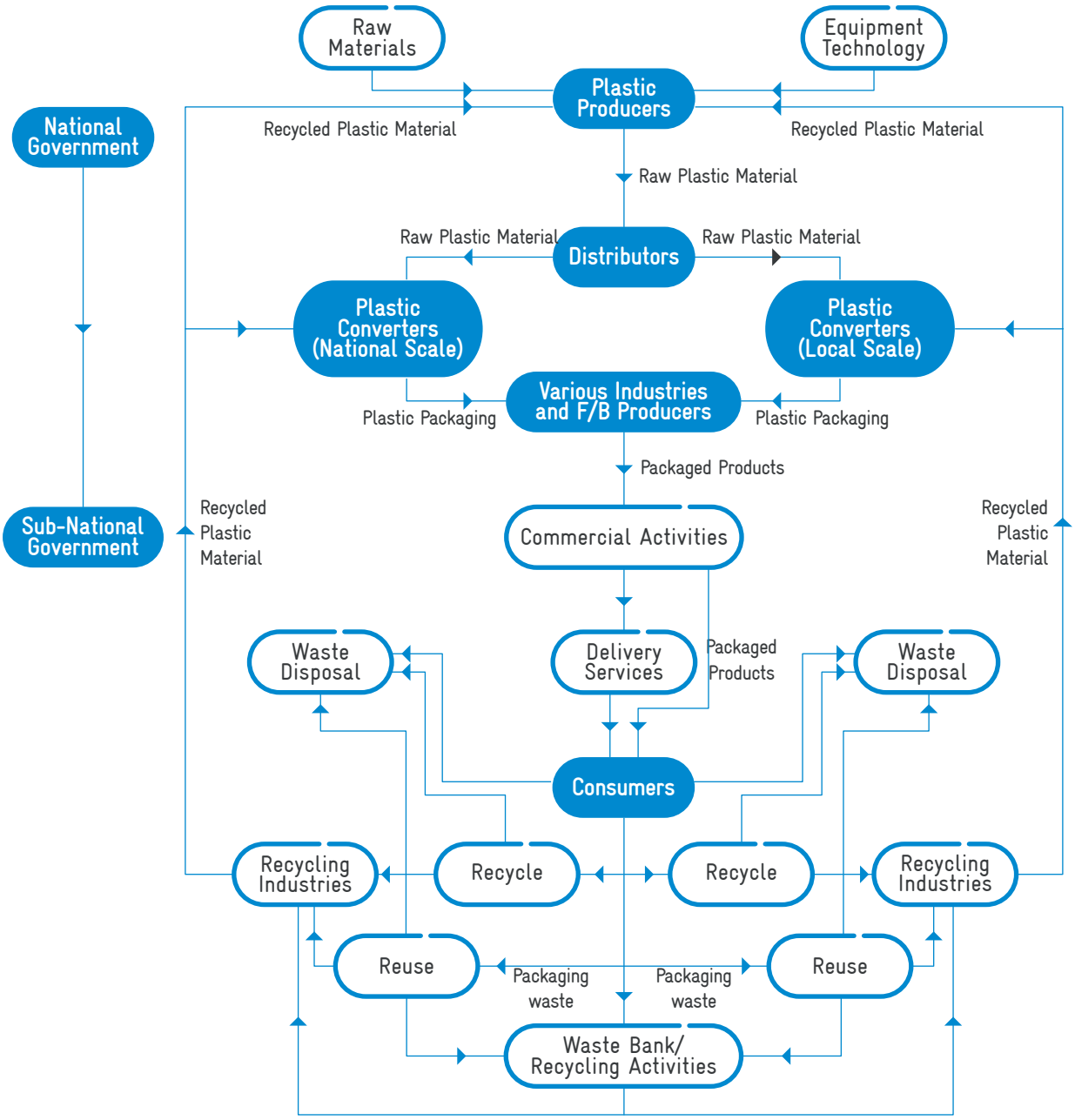


Figure 2 1. Typical Plastic Life Cycle

Notes:

- Raw materials consist of (i) imported virgin materials, (ii) domestic virgin materials, (iii) imported recycled materials and (iv) domestic recycled materials.
- Equipment and technology consist of (i) imported equipment and technology and (ii) domestic equipment and technology.
- Plastic Producers: Entities who produce plastic (monomer and polymer).
- Plastic Converters: Entities who produce goods made from plastic including packaging producers.
- Various Industries and F & B Producers: Entities who use plastic to package their products.
- Commercial Activities: Entities who sell packaged products to customers directly or via delivery services.
- Delivery services: Entities who deliver goods purchased via online market.

Of the plastic waste that is collected, most is handled by local governments (2.1 million tonnes, or 32% of total plastic waste). Nearly all of this waste is combined with other household waste streams and goes directly to landfills or official dumpsites without being sorting by the households or the collection system. We estimate that government-run sorting centres (TPS3R) process around 1% of the waste collected. Approximately 8% of plastic waste that is collected by local governments is brought to uncontrolled official dumpsites from where it can leak into the environment, including into water bodies. As of early 2020, Indonesia does not have commercial-scale incineration or waste-to-energy facilities, but several are planned. The informal sector (including waste pickers, junk shops, and aggregators) plays a critical role in waste collection. This sector collects around 500,000 tonnes of plastic waste (7% of total plastic waste) directly from residential areas and 560,000 tonnes of plastics (8% of the total) from collected waste that is in transit to landfills and from landfills themselves. Nearly all waste collected by the informal sector ends up at a recycling facility.

Of the 1 million tonnes of plastic waste that the informal sector collects for recycling, around 700,000 tonnes are recycled; the remaining 300,000 tonnes are eventually disposed of due to yield losses in the sorting and recycling process, such as after contamination with organic material. As a result, Indonesia's plastic recycling rate amounts to around 10% of the total 6.8 million tonnes of plastic waste generated (measured as a percentage of plastic waste that is actually recycled into new plastic). Of recycled plastics, around 85% are processed in a way that makes it difficult to recycle the product again. An example of this are recycled PET bottles used for textiles, or mixed plastics (NPAP, 2020).

The existing capacity of the waste management system in Indonesia needs to be improved. The state of the waste management in Indonesia in 2019 can be seen in the **Table 2-1** below. 29% of waste was generally dumped to landfill. Many landfills are still operated using the open dumping method.

Table 2 1. Waste Management Conditions in Indonesia in 2019

NO	Management Component	Conditions in 2019
1	Waste management capacity	32%, consists of: a. 3% reduction b. 29% handling
2	Plastic waste entering the sea	0.25-0.59 million tons/year
3	Indifference index	0.72
4	Percentage of society sorting waste	11%
5	Recycling rate	11-13%
6	PSEL (Processing waste into electrical energy)	0 cities
7	RDF (Refused Derived Fuel)	0 ton/day
8	Single-use plastic bag restriction	1 province and 19 districts/cities

Source: Directorate General of Waste, Waste and B3 Management of the Ministry of Environment and Forestry

Plastic pollution can alter species distributions, transport invasive species, and cause mortality through entanglement and ingestion (Gall and Thompson, 2015; Welden, 2020). As plastic degrades into microplastics, it can release methane and ethylene when exposed to solar radiation, and hydrocarbon gas when exposed to water; thus, contributing to greenhouse gas (GHG) emissions (Royer et al., 2018 in Molloy et al., 2022).

2.3 Policy Context Review

In recent years, increasing public awareness about the issue of plastic pollution has led to the implementation of numerous waste prevention policies across the world. According to UN Environment Programme, 127 countries worldwide had adopted national legislation concerning plastic bags and 56 countries had banned or taxed other single-use plastic goods (e.g., cutlery, bottles, food packaging) or specific polymers as of July 2018.

The Indonesian government attaches great importance to the need for addressing plastic waste. Relevant policies and regulations have been enacted at national and sub-national level concerning different stages of the plastic life cycle. The recycling aspect of plastic packaging has been a concern for the Government of Indonesia in the last decade. In 2010, the Government issued Regulation of the Minister of Industry 24/M-IND/PER/2/2010 regarding the Inclusion of the Food Grade Logo and Recycling Code on Plastic Food Packaging. The Food Grade Logo is a sign indicating that a food package is safe to use for food. The Recycling code is a sign indicating that a food package can be recycled. The regulation was applied to any food package that is traded domestically and comes from domestic production or imports.

Some of the raw materials used for domestic plastic production must be imported from other countries. To limit the import of plastic raw materials, the Government issued Regulation of the Minister of Trade of the Republic of Indonesia Number 08 of 2018 concerning the Second Amendment to the Regulation of the Minister of Trade Number 36 / M-DAG / PER / 7/2013 concerning Provisions for the Import of Plastic Raw Materials.
In addition, the import of plastic waste material into Indonesia is also increasing. Data from the Ministry of Trade of the Republic of Indonesia shows that imports of plastic waste in Indonesia increased by 141%or as much as 283,000 tons during 2018. In this regard, the Government has imposed restrictions with the enactment of Regulation of the Minister of Trade Number 84 of 2019 concerning Provisions for the Import of Hazardous and Toxic Non-Material Wastes as Industrial Raw Materials to replace the regulation of Minister of Trade Number 31 of 2016.

With regards to the production of plastic-based goods, the Government has implemented various standards. One of them is the Regulation of the National Standardization Agency Number 1 of 2019 concerning Conformity Assessment Schemes Against Indonesian National Standards in the Rubber and Plastic Product Sector. The Conformity Assessment Scheme against SNI for Rubber and Plastics Products Sector includes Conformity Assessment Schemes for the following products:

a. Rubber gloves for households;
b. Plastic bags;
c. Plastic containers;
d. Plastic pipes;
e. Plastic cups for bottled drinking water;
f. PVC corrugated plastic roofs;
g. Plastic pipe fittings / joints;
h. Shoe soles;
i. Plastic woven sacks;
j. Plastic sheeting;
k. Polycarbonate plastic sheets; and
l. Plastic pellets.

Concerning plastic recycling activities, the GoI has issued a national standard (SNI) 8424: 2017 on recycled polyethylene terephthalate (PET) resins, which stipulates quality requirements and test methods for recycled polyethylene terephthalate (PET) resin as raw materials for packaging. The existence of this SNI can encourage the PET packaging industry to produce recyclable packaging. Additionally, the GoI has collaborated with the National Food and Drug Authority (BPOM) to issue guidelines and criteria for food-grade PET recycling[7].

The Ministry of Industry has also prepared a Good Manufacturing Process (GMP) concept for PET-type plastics. It is used for the Guidelines for the Production Method of Polyethylene Terephthalate (PET) Plastic Food Packaging. GMP is a quality assurance measure in addition to the Indonesian National Standard (SNI) and technical standards. It is intended to boost the market for recycled plastic products, which were not originally used for food-grade products. It is considered to become a stimulus for industry players to produce recycled PET packaging and can increase the export of recycled products.

Efforts to manage the consumption of SUP, particularly plastic bags, are also introduced in levies and paid plastic bag policies enacted in some sub-national regions. The measure aims at controlling the use of single-use plastic bags. The consumers are expected to use other types of bags that can be used repeatedly. In the long term, the industry will be encouraged to produce bags that are more environmentally friendly or can be used repeatedly, or to find new technologies that support environmentally friendly concepts.

The regulatory framework for waste management including plastic waste in Indonesia is principally based on the Law No. 18 of 2008 concerning Waste Management, as demonstrated in Figure 2-2 below. Figure 2-2 illustrates that the national regulations in Indonesia include government regulations and ministerial regulations as implementation guidelines at operational level. At sub-national level, provincial and city governments also have regulations based on their authority.

There are several derivative regulations as implementation guidelines such as:

1. **Government Regulation No. 81 of 2012** concerning the Management of Household Waste and Similar Household Waste.

2. **Presidential Regulation No. 97 of 2017** regulates the National Policy and Strategy for the Management of Domestic Waste. This regulation mandates the Regional Government to prepare a JAKSTRADA (Regional Strategy Policy) document for waste management.

[7] *https://standarpangan.pom.go.id/dokumen/pedoman/Pedoman-Kriteria-PET-Daur-Ulang.pdf*

3. **The Minister of Environment and Forestry Regulation No.10 of 2018** that provides guidelines in the preparation of the JAKSTRADA for waste management.

4. **Government Regulation No. 27 of 2020** concerning Specific Waste Management. Specific waste is waste material which, due to its nature, concentration and/or volume, requires special management. One of the specific types of waste regulated in this Government Regulation is the waste material that cannot yet be processed technically, including plastic waste from a multilayer type of plastic. This type of waste must be managed by a certain mechanism that includes the sub-national and national government. It requires analysis and evaluation efforts involving the Ministry of Environment and Forestry, the Ministry of Industry and research institutions.

5. **Presidential Decree No. 83 of 2018** concerning Marine Debris Management is also a general guideline that regulates the Action Plan for reducing waste, especially plastic. This action plan provides directions for:
    a. Ministers and heads of non-ministerial government agencies to determine sectoral policies for handling marine debris, which are outlined in the strategic planning documents of each ministry/non-ministerial government agency as part of the development planning document.
    b. Local governments in establishing policies to accelerate marine debris handling.

6. **Regulations at the regional level** (Regional Regulations, Regent/Mayor Regulations) regulating waste management then become general guidelines for the implementation of waste management in the regions.

- Law Number 18/2008 Concerning Waste Management -

- Government Regulation Number 81/2012 Concerning Household & Household Like Waste -

- Government Regulation Number 27/2020 Regarding Specific Waste -

- Presidential Regulation Number 97/2017 Concerning National Policies and Strategies for the Management of Household Waste and Household Like Waste
- Presidential Regulation Number 83/2018 Concerning Marine Waste Management
- Local Regulation on Waste Management

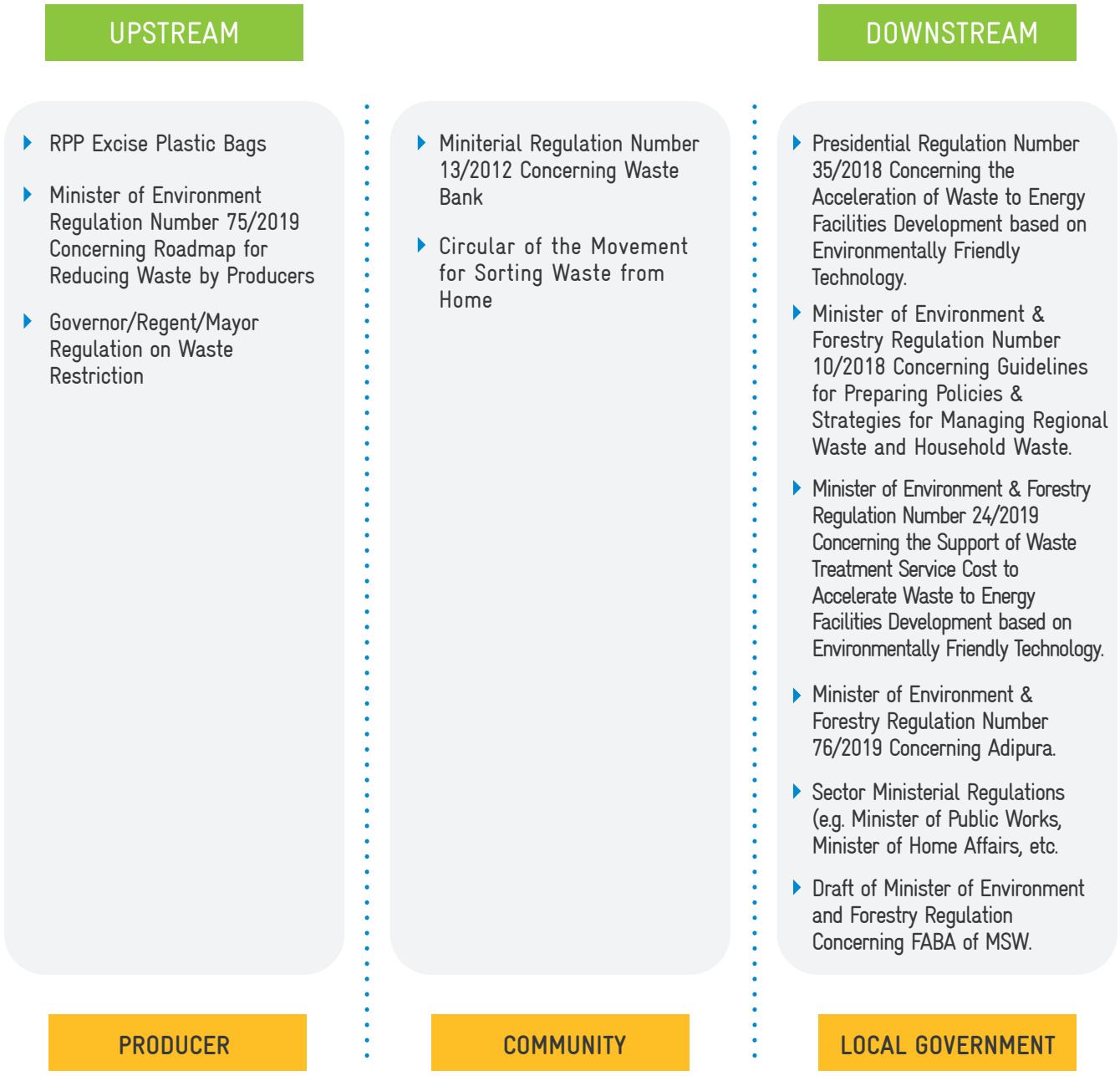


Figure 2 2. Regulatory Framework Related to SUP

Indonesia has issued a regulation regarding the action plan for handling waste, especially upstream plastic waste, namely the Minister of Environment Regulation No.75 of 2019 concerning the Road Map for Waste Reduction by Manufacturers. In addition, several sub-national governments have issued regulations regarding restrictions on plastic waste, most of which regulate restrictions/prohibitions on the use of single-use plastic packaging and some of them provide guidance through religious approaches.

Some regulations that provide guidance for operational aspects of downstream plastic waste management have also been enacted, such as:

1. **The Minister of Public Works Regulation No. 03/PRT/M/2013** concerning the Implementation of Infrastructure and Facilities for Solid Waste and handling of Household Waste and Waste Similar to Household Waste;
2. **Presidential Regulation No. 35 of 2018** concerning the Acceleration of the Construction of Waste Processing Installations to Produce Electricity, Using Environmentally Friendly Technology; and
3. **The Minister of Environment and Forestry Regulation No. 24 of 2019** which regulates the Assistance for Waste Management Service Fees (BPLS) in the Framework of Accelerating the Construction of Waste Processing Installations into Waste-to-Energy.
4. In addition, Adipura programmes and awards are regulated in the **Minister of Environment and Forestry Regulation No. 76 of 2019.**

Efforts in addressing plastic waste problems have not only been carried out through the mobilisation of domestic resources, but also by establishing alliances with various international stakeholders such as the National Plastic Action Plan (NPAP). The goal of the Indonesian NPAP is to achieve a 70% reduction in the nation's marine plastic debris by 2025. Five key actions to achieve the objective have been identified as described in Table 2-2.

Table 2 2. Five key actions of the NPAP Action Plan[8]:

NO.	KEY ACTION	DESCRIPTION
1.	Reduce and substitute	Reduce or substitute (R&S) plastic usage to prevent the consumption of around 6.5 million tonnes of plastics per year by 2040.
2.	Redesign	Redesign 1.1 million tonnes of plastic products and packaging to increase high-value recycling or support greater reuse
3.	Collect	Collect 2.6 times more waste by 2040 by boosting state-funded and informal/private-sector collection systems
4.	Recycle	Quadruple current recycling capacity to process an additional 2.1 million tonnes per year of recycled plastic by 2040
5.	Controlled Disposal	Build or expand controlled waste disposal facilities to safely manage an additional 4.3 million tonnes of plastic waste per year by 2040

Source: NPAP (2020)

[8] *Indonesia's National Plastic Action Plan is the country's first comprehensive analysis of plastic solutions launched in April 2020.*

As experienced by most developing countries globally, one important issue that needs to be addressed is the question of financing. Based on the NPAP (2020), several changes for relevant financing systems were proposed, as described in Table 2-3.

Table 2 3. Proposed Financing System Change based on NPAP (2020)

NO	KEY ACTION	CURRENT FINANCING MODELS	PROPOSED FINANCING MECHANISM
1.	REDUCE AND SUBSTITUTE	• Seed/angel/venture capital for early-stage ventures, e.g., UUSE/Ecoware/Econesia. • Philanthropy, e.g., Enviu Zero Waste Living Lab. • Corporate social responsibility and sustainability initiatives, e.g., reusable water gallon; voluntary phase-out of straws	• Incubator for Indonesian ventures and technology transfer from overseas. • Seed/angel/venture capital funding for early-stage ventures, likely patient impact capital. • Industry funding and in-house innovation and scale-up of solutions. • Shared industry funding for innovation and system building.
2.	REDESIGN	Industry funding, in-house innovation, and scale-up of solutions; typically, a global approach for multinationals	• Industry funding, in-house innovation, and scale-up of solutions; typically, a global approach for multinationals. • PULL Fund mechanisms, e.g., awards, scholarships, competitions, performance-based financing.
3.	COLLECT	**Government-run waste management** • In new areas: national government budgets (Dana Alokasi Khusus, etc.), some corporate social responsibility (CSR) funds, some support from industry and multilateral/donor grant funding. • Ongoing operating costs in areas with coverage. • Household retribution fees, typically collected door to door by local governments. • Subsidies from regencies/villages (Environmental Agency, Dana Desa, etc.). • Multilateral/donor grant funding for action-innovation projects focused on collection and recycling. **Private/informal sector** • In new areas: investments by the informal sector itself, CSR/NGO funds (e.g., waste banks). • Ongoing operating costs in areas with coverage, mostly sales of recyclable material.	**Government-run waste management** • In new areas: much larger national government budgets that can be used for both capital expenditures and operating expenses; more co-funding by industry; multilateral or donor support. • Ongoing operating costs in areas with coverage. • Household retribution fees, higher (new regulation) and collected online or "indirectly", e.g., at the same time as the electricity payment. • Subsidies (minimum mandatory spending). • Sales of recyclable material and compost. • Extended producer responsibility schemes. **Private/informal sector** • In new areas: investments by the informal sector based on better operational costs, CSR/NGO funds (e.g., waste banks). • Ongoing operating costs in areas with coverage. • Sale of recyclable material at a higher price to meet demand for recycled content. • Extended producer responsibility schemes
4.	RECYCLE	• Private-sector investment and operations of recycling facilities and supply chains, typically debt financing. • Industry investment in new recycling facilities (e.g., Unilever/CreaSolv). • Shared industry investment fund for collection and recycling in South and South-East Asia (Circulate Capital), including loan guarantees from donors (US).	• Co-funding by government and industry for the operational financing of the plastic waste collection and recycling system through extended producer responsibility or a similar policy; possible revenue guarantees to support investment. • Continued (private) recycling sector investment and operations of recycling chain.

4. RECYCLE		• Upstream industry (e.g., brands, retailers, producers) contributions to operational funding through producer responsibility organisations or similar entities. • Price premiums and forward contracts by users of recycled material to improve operational funding and provide price stability (thus stimulating investments) and factoring to solve liquidity issues (mitigating long payment cycles or defaults). • Venture financing for recycling companies (debt/equity). • Incubation and technical assistance grants to deploy new technologies or enable improvements in quality or environmental/social standards. • Project financing for new facilities drawing on a blend of impact investment and commercial investment. • Advanced market commitments (e.g., GAVI). • Tariffs. • Offtake agreements. • Corporate social responsibility commitments.
5. CONTROLLED DISPOSAL	• Government funding and management of controlled disposal (landfill); multilateral funding. • Private-sector management (Surabaya landfill). • Private-sector investment for new waste-to-energy, waste-to-fuel and chemical recycling infrastructure.	• Increased government funding of disposal facilities supported by multilateral/bilateral funding. • Technical assistance grants to deploy new technologies, build technical capabilities or enable improvements in quality or environmental/social standards. • Blended finance approaches to increase private capital in disposal projects.

According to the NPAP (2020), reaching the target requires capital investments of around 18 billion USD for waste management and recycling between 2017 and 2040, and an estimated 1 billion USD per year increase in operational financing for solid waste management systems by 2040. The investment opportunity for circular economy sectors could grow to about 10 billion USD per year in revenue by 2040, driven by increased sales of recycled plastic and substitutable materials and revenue from new business models.

Various incentive and disincentive measures can be considered for the prevention of single-use plastics and packaging. The application of those measures at various stages of the plastic life cycle aims at mobilising resources required and at changing the consumers' behaviour to become more environmentally friendly.

Chapter 3. Possible Economic and Fiscal Measures for SUP Prevention

In 2020, the NPAP Indonesia created a financing roadmap to address plastic waste-related challenges, including SUP prevention. The Indonesian NPAP Action Plan Document states the need for outlining the System Change Scenario (SCS) with a set of actions for Indonesia to deliver ambitious goals and ultimately achieve near-zero plastic pollution by 2040. Furthermore, significant investments are also necessary in "upstream" (pre-consumption) stages of the plastic life cycle to enable the reduction, substitution, redesign, or reuse of plastics.

The system change also brings about opportunities for private investment into circular economy sectors that could grow rapidly to an estimated 10 billion USD per year in revenue by 2040:

- Plastic recycling: 2.8 billion USD per year in sales of recycled plastic; creation of closed-loop circular recycling systems;
- Substitute materials with improved environmental performance: 2.2 billion USD per year in sales;
- Packaging reuse: 860 million USD per year;
- Alternative delivery models (e.g., refill shops, take-back services, packaging-free deliveries): 3.4 billion USD per year; and
- Waste collection and controlled disposal: 590-950 USD million per year in service revenues (for plastic waste only), part of which is accessible for the private sector; a larger part is projected to stay within government entities such as region-owned enterprises.

There are three cross-cutting efforts that essentially need to unlock financing and investment opportunities:

a. Incubating and scaling up innovations, ventures and project developments at all stages of the plastic system, through supportive policies, incentives, and action;

b. Closing the operational financing gap for city-level waste collection and recycling systems, and building institutional and technical capacity, starting by identifying low-hanging fruit and facilitating small pilot projects that are scalable; and

c. Enabling capital investments in the after-use (waste and recycling) system through system changes, technology and blended finance approaches, starting with conceptual notes for further discussion by stakeholders.

Various economic and fiscal measures can be used to intervene in the above objectives. Economic and fiscal measures (incentives or disincentives) also aim at influencing people's behaviour towards more environmentally friendly habits. Those measures could be introduced at different stages of the plastics lifecycle. Each option has its' own implications for administrative costs, specificity of the policies to single-use plastics, and public response. Upstream policies target intermediate inputs or refined materials, final product policies apply to consumers, and waste

policies target end-of-life waste generation. Upstream policies affect fewer actors, can especially influence design choices, and cause relatively low administrative costs. However, these policies do not isolate single-use plastic inputs from those for durable plastic products, as can be done with final product policies. Furthermore, the impacts of upstream policies on a relatively concentrated group of actors increase the likelihood of their resistance to these measures.

3.1 Potential Economic and Fiscal Measures

There are quite a lot of economic and fiscal measures that can be applied at various stages of the plastic life cycle for preventing SUP and packaging as can be seen in the Figure 4 below.

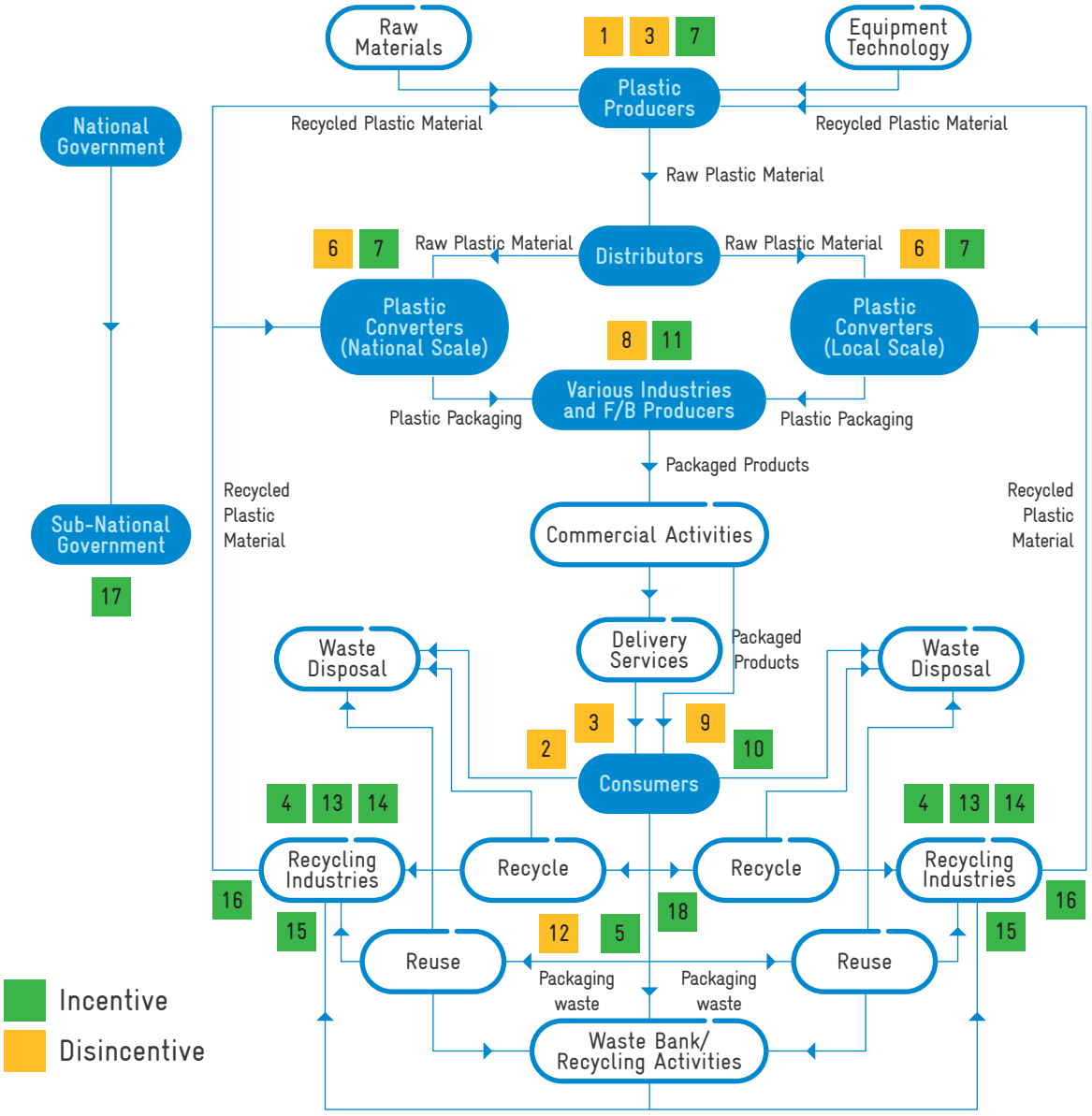


Figure 3 1. Mapping of Possible Economic and Financial Measures Based on the Plastic Life Cycle

Notes

- **Raw materials** consist of
  (i) imported virgin materials
  (ii) domestic virgin materials
  (iii) imported recycled materials and
  (iv) domestic recycled materials.
- **Equipment and technology** consist of
  (i) imported equipment and technology and
  (ii) domestic equipment and technology.

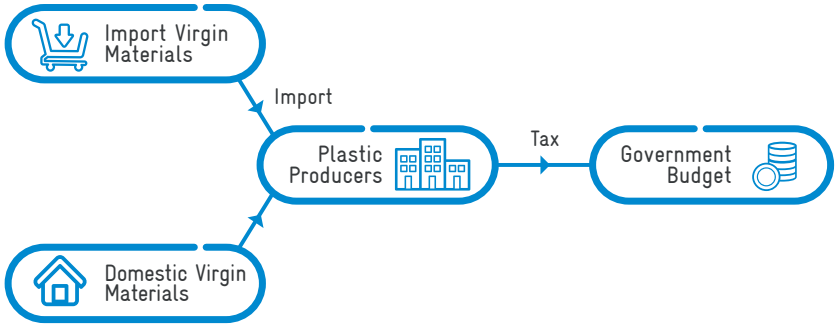
- **Plastic Producers**: Entities who produce plastic (monomer and polymer).
- **Plastic Converters**: Entities who produce goods made from plastic including packaging producers.
- **Various Industries and F & B Producers**: Entities who use plastic to package their products.
- **Commercial Activities**: Entities who sell packaged products to customers directly or via delivery services.
- **Delivery services**: Entities who deliver goods purchased via online market.

Possible economic and fiscal measures include:
1. Tax on virgin raw materials
2. SUP packaging levies
3. Plastic credits
4. Tax incentives for recycling investment
5. Green public procurement
6. Tax on non-recyclable plastic
7. Tax deduction for the use of recyclable plastic materials
8. Tax incentives for using reusable and recycled content packaging
9. Consumer rebate
10. Deposit return system
11. Extended producer responsibility
12. Waste charge
13. Guarantee facility for recycling investment
14. Interest subsidy and soft loan for recycling investment
15. Interest subsidy and low-cost import financing for new technology import
16. Partial grant for recycling investment
17. Result-based SUP performance fiscal transfer to local governments
18. Waste bank incentive

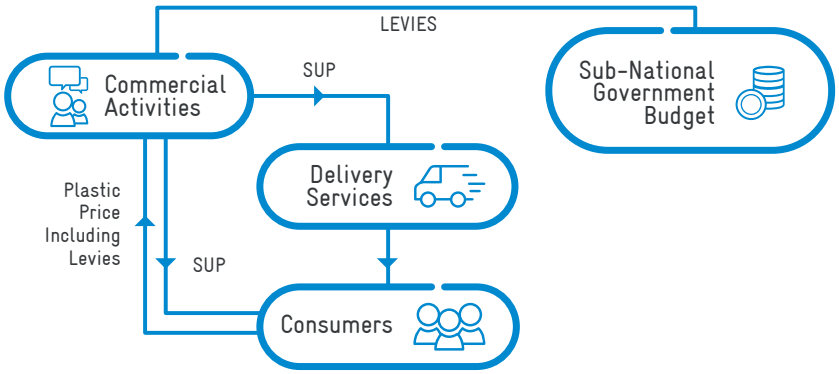
As described above, these measures can be categorized into incentives and disincentives and are applied to the:
- Production and distribution stage (to plastic producers, plastic converters, various industries including the food and beverages sector, or plastic recycling industries);
- Consumption stage (to consumers).
- Post-consumption stage (to consumers, waste bank, local government, and recycling industries).

Brief explanation of each possible measures is described as follows.

a. Tax on Virgin Materials

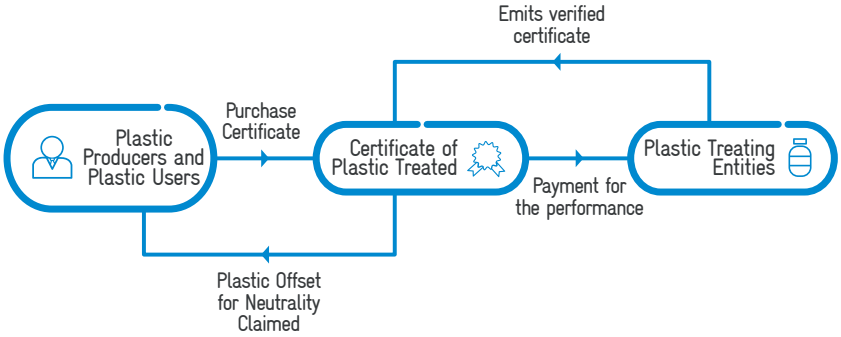
Description	A tax on virgin materials applies to producers or vendors of monomers, polymers, packaging items made of virgin fossil feedstock, and plastics placed on the market for consumption. The tax rate correlates with the weight or the value of a packaging item. The tax is collected by the National Government.
Implementation	The USA plan to commence at 0.10 USD a pound in 2022 and raise it to 0.15 USD in 2023 and 0.20 USD in 2024. In subsequent years, the tax would be updated based on cost-of-living adjustments. This measure is not yet implemented anywhere although there are similar measures (e.g., packaging tax) already in place that create similarly deterrent impacts.
Target Entities	• The tax applies to Plastic Producers for using virgin materials. • The tax applies to imported materials and domestic virgin materials.
Opportunities	• It encourages businesses and consumers to use more environmentally friendly alternatives and to boost the recycling industry without direct subsidies. • If the tax is high enough and there are environmentally friendly alternatives, the intended behaviour change could be achieved.
Challenge	• It should be applied in combination with other measures, such as a tax on single-use plastic packaging, tax incentives for recycling investment, etc. • Technological solutions should be implemented to ensure recycled materials have the same quality as virgin materials.
Institution	Ministry of Finance, Ministry of Industry, and Ministry of Trade.
Scheme	

b. Single-Use Plastic Packaging Levies

Description	• Products with SUP packaging will be charged (can be extended to single use plastic products). • Levies are integrated in the plastic price and paid by consumers to sellers. • Sellers act as collecting points for levies (commercial spots). • Sellers pass on collected levies to sub-national government. • Levies are taken in by the Sub-National Government. • The levy rate correlates with the number of SUP consumed.
Implementation	• Applied in many countries such as UK, Ireland, Spain, Italy, Croatia, Norway, Scotland, China, etc. • Already started in Thailand with certain supermarkets, shopping malls, retail/convenience stores which charge between 1-6 THB for customers who need a carrier bag.
Target Entities	• Levies are applied to End Consumers for consuming SUP. • Pay-for SUP plastic bags are available in many cities in Indonesia, mainly in commercial centres. The price depends on the commercial centre.
Opportunities	• Designed to discourage people from consuming SUP packaging. • Expected to influence consumers' and manufacturers' behaviour towards reusable packaging or even unpackaged options, if implemented with other incentives (e.g., tax deduction, tax waiver, consumer's bonus scheme). • Supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 particularly on waste reduction.
Challenge	SUP informal trading activities may not be covered.
Institution	Office of Trade, Office of Tax at Sub-National Government.
Scheme	

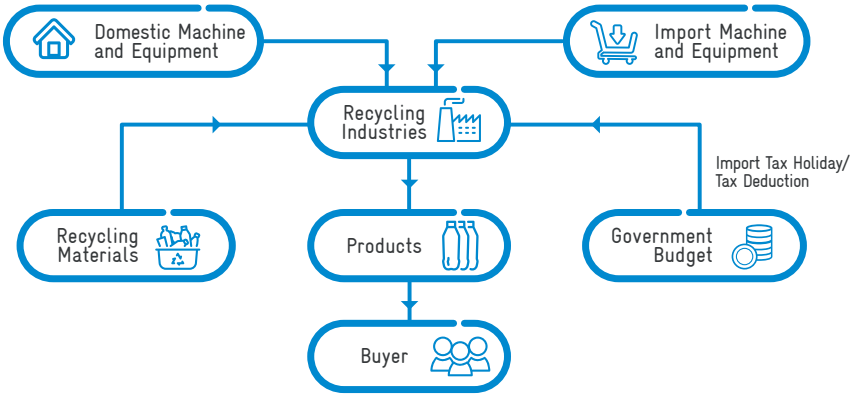
c. Plastic Credit

Description	A mechanism that allows companies which use plastics (in their products and packaging) to offset their plastic footprint by paying money to projects or groups that have "plastic credit" due to collecting recyclable plastics. The price mechanism is governed by a third-party accreditor.
Implementation	• Implemented through different names by different groups (e.g., Circular Credits, Social Plastic Collection Credits, Neutralisation Certificates, Ocean Bound Plastic Credits) in India, Vietnam, Brazil, Mexico. • Second Life Thailand, a social enterprise, was certified in connection with the Plastic Waste Reduction Programme (by Verra).
Target Entities	• Plastic producers and plastic users pay certain entities for treating plastic waste. • In return, plastic producers and plastic users receive certificate for treated plastic.
Opportunities	• Designed to reward improved waste collection, sorting, and recycling, while minimising its environmental impact on ecosystems, reducing the carbon footprint and waste management cost. • Provides extra income for low-income communities and/or informal sectors who participate in the programme and can build on existing waste bank programmes in the community.
Challenge	• Plastic credits may be 'proprietary' or 'third-party' and are typically generated through micro, small, or medium-scale project operations. • To make it work, there must be plastic credit registries and trading platforms established and a real-time trading system in place for indicating prices and qualities. • Will work well with a well-run EPR program or Waste Banks. • At the moment, global standards are being developed to assure and describe the quality of different plastic credits.
Institution	Ministry of Environment and Forestry

Scheme *Plastic Users can be categorised as end consumers, various industries, and F/B producers.	

d. Tax Incentive for Recycling Investment

Description	• Tax incentives can be offered to Plastic Industries and other entities for building factories for recycling plastic/facilities for commercial purposes or internal consumption. • They are provided by the national government and could be imposed as import tax holiday, import tax deduction, value added tax deduction, etc. • Amount of tax incentive correlates with the investment amount (purchasing machines and equipment).
Implementation	• In Indonesia, tax incentives are provided to certain entities and sectors that apply new and greener technologies. • In Indonesia, the Ministry of Environment and Forestry and the Ministry of Industry have proposed to introduce a lower VAT from 10% to 5% or 2% for recycling businesses. • Thailand's Board of Investment has rolled out several tax incentive packages for the recycling industry (e.g., converter, recycler) and start-ups that develop/deploy applications or digital platforms to resolve development challenges, such as plastic problems.
Target Entities	Entities intending to build factories/facilities for recycling plastic.
Opportunities	• Creates a clear incentive for encouraging investors to build recycling facilities. • Develops market for recycled materials and creates price competitiveness of recycled products in the market. • Increases the availability of affordable recycled products on the market due to increasing supply. • Indirectly encourages the separation of waste at sources. • Supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 in waste recycling. • Can support the regulation of the minimum level of domestic content in industrial sectors.

Challenge	• Favourable ecosystem for recycling businesses needs to be developed, particularly in relation to feedstock sustainability and market maturity. • Other financial incentives (e.g., soft loans) and technical capacity-building may also be needed for smaller enterprises to enter the market. • Smaller waste collectors who play a crucial role in the recycling ecosystem should be supported by the government both at national and local levels to continue their work.
Institution	Ministry of Finance, Ministry of Environment and Forestry, Ministry of Industries, and Ministry of Trade.
Scheme	

e. Green Public Procurement (GPP)

Description	GPP is a system that promotes environmentally friendly goods and services in government procurement at national and local levels.
Implementation	• GPP has already been applied in many countries of North America, Europe, Asia, Australia, and New Zealand. • In Thailand, The Pollution Control Department (PCD) launched a voluntary guideline for green packaging procurement in 2021 covering plastic and paper packaging. However, it has not yet been implemented due to a lack of qualified vendors.
Target Entities	Providers/Vendors of goods related to plastic and packaging use.
Opportunities	• GPP provides non-financial incentives as an advantage in the bidding process for bidders using green or recycled products. • It promotes sustainable production and a circular economy, particularly related to plastic and packaging.

- Supports the existing recycling industry and encourages more recycling investments in the country.
- It could potentially be applied on the national level and on the sub national level.
- Guidance for GPP could be provided by the National Public Procurement Agency (LKPP) through a coordination with the Ministry of Environment and Forestry and other relevant ministries.
- Details of non-financial incentives are defined by a procurement committee.

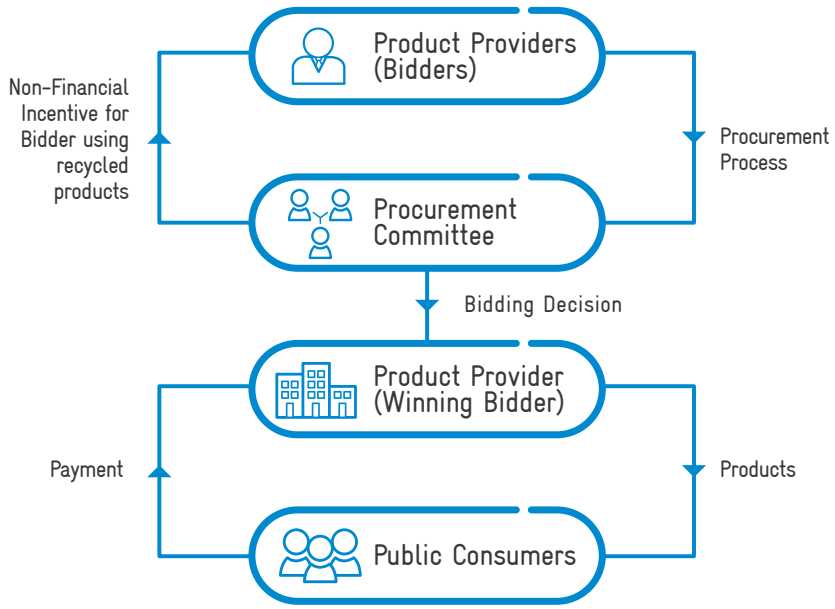
Challenge

- Standard of GPP in plastic and packaging has not been developed yet and not yet included in the LKPP requirements.
- It is ideally combined with other schemes to ensure sufficient supply in the country.
- Acceptance of stakeholders to implement GPP for plastic and packaging products as mandatory.

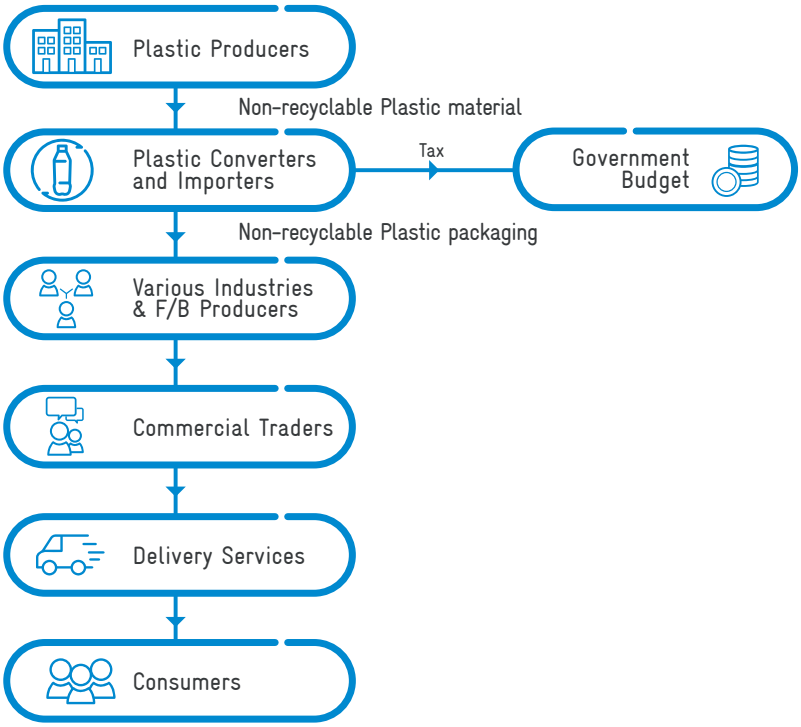
Institution

National Public Procurement Agency, Procurement Bureau in all Ministries, Provincial Procurement Bureau, Municipal Procurement Bureau, and Procurement Unit of other Public Institutions.

Scheme



f. Tax on non-recyclable plastic

Description	• The tax applies to Plastic Producers, Converters and Importers for using non-recyclable materials for producing packaging. • The tax is collected by the National Government or the local governments. • The amount of the tax correlates with the amount of non-recyclable materials used for producing non-recyclable plastic packaging.
Implementation	• Spain and Italy have plans to introduce a plastic tax in 2023. • The UK introduced plastic tax in 2022.
Target Entities	Plastic Producers, Converters and Importers.
Opportunities	• It creates disincentives for SUP packaging products. • It fosters a more sustainable production and the reduction of virgin plastic resin in packaging products.
Challenge	Support from the waste management system is necessary, particularly regarding waste segregation and the recycling infrastructure as well as auditing and the verification process.
Institution	Ministry of Industry, Ministry of Finance, Industrial Office and Tax Office of Local Government.
Scheme	

g. Tax deduction for the use of recycled and recyclable plastic material

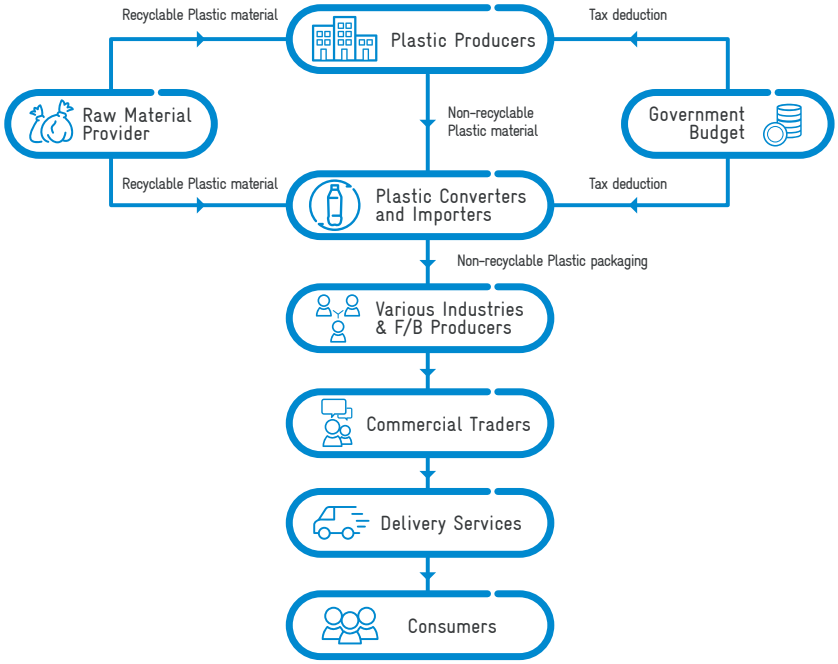
Description	• Tax deduction is provided to Plastic Producers and Converters for using recyclable materials to produce plastic packaging. • Tax deduction is provided by the National Government or local governments, depending on the type of tax deduction. • The amount of the tax depends on the amount of recyclable plastic material used for producing recyclable plastic or packaging.
Implementation	• In Indonesia, tax incentives are provided in certain sectors to entities that apply new and greener technologies. • In Indonesia, the Ministry of Environment and Forestry and the Ministry of Industry have proposed a lower VAT from 10% to 5% or 2% for recycling businesses. • The implementation could be expanded for attracting Plastic Producers and Converters. • Thailand's Board of Investment has rolled out several tax incentives packages for the recycling industry (e.g., converter, recycler) and start-ups that develop/deploy applications or digital platforms to resolve development challenges, such as plastic problems.
Target Entities	Plastic producers and converters.
Opportunities	• Provides concrete financial incentives for plastic producers and converters to build a recycling-friendly business by offering a VAT deduction for purchasing plastic materials, or the deduction of income tax, etc. • Strengthens the market for recycled materials and creates price competitiveness of recycled products on the market. • Increases the availability of affordable recycled products on the market due to higher supply. • Indirectly encourages separation of waste at sources. • Supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 in waste reduction and recycling. • Will contribute to creating additional value, durability, and avoidance of virgin materials for the final products.
Challenge	• Favourable ecosystem for recycling business needs to be developed, particularly with regard to feedstock sustainability and market maturity.

- Other financial incentives (e.g., soft loans) and technical capacity-building may also be needed for smaller enterprises to enter the market.
- Smaller waste collectors who play a crucial role in the recycling ecosystem should be supported by the government to continue their work.

Institution

Ministry of Industry, Ministry of Finance, Industrial Office and Tax Office of Local Government.

Scheme



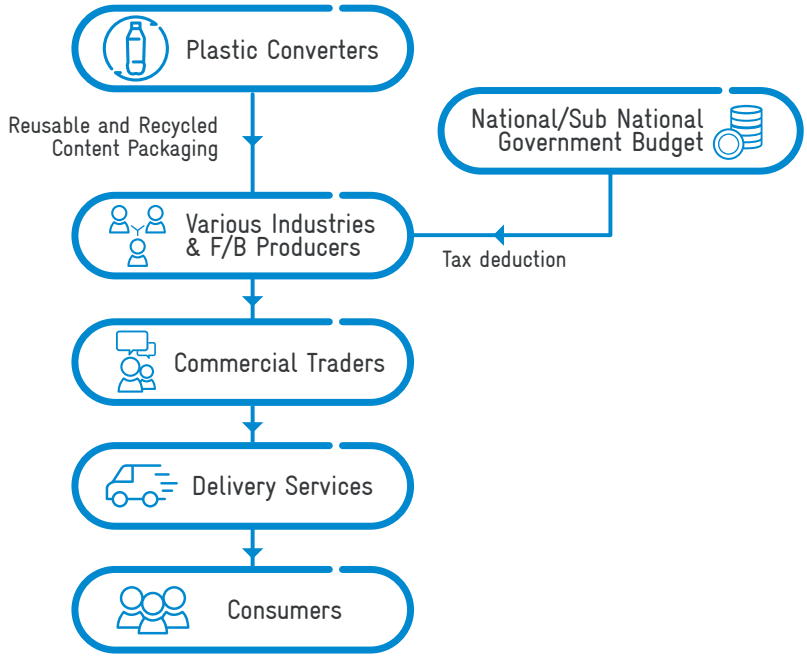
h. Tax deduction for using reusable and recycled content packaging

Description

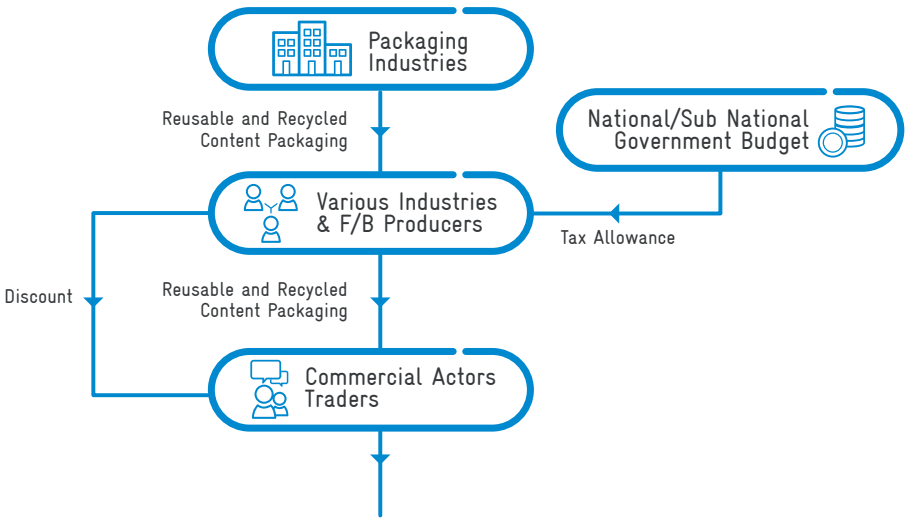
- A tax deduction is provided to Various Industries and F/B Producers (Businesses) for using reusable and recycled content packaging for their products.
- The deduction is provided by the National Government or local governments.
- The amount of the tax depends on the amount of reusable and recycled content packaging of their products.

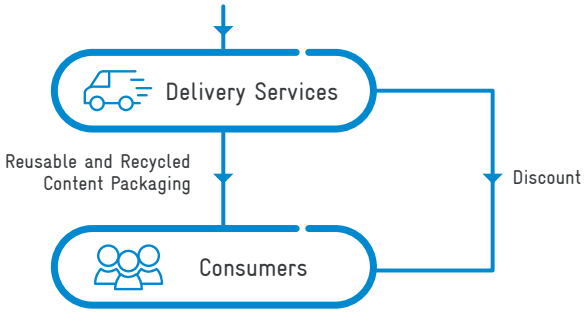
Implementation

- In Indonesia, tax incentives are provided in certain sectors to entities that apply new and greener technologies.
- In Indonesia, the Ministry of Environment and Forestry and the Ministry of Industry have proposed a lower VAT from 10% to 5% or 2% for recycling businesses.

	• The implementation could be expanded for attracting various Industries and F/B Producers (Businesses).
Target Entities	Various Industries and F/B Producers (Businesses).
Opportunities	• Provides concrete financial incentives for Business Entities (various industries and F/B producers) to get involved in SUP packaging prevention by providing a VAT deduction for purchasing plastic materials, the deduction of income tax, etc. • Strengthens the market for recycled materials, creates price competitiveness of recycled products on the market, and promotes the use of reusable packaging. • Increases the availability of affordable recycled products on the market due to rising supply. • Supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 on reuse and waste recycling.
Challenge	• The scope of businesses and/or products must be considered carefully due to different impacts at different stages of the supply chain and different sets of requirements. • Criteria of eligible business entities should be defined clearly. • The verification and thorough analysis of the tax impacts are also important and needed.
Institution	Ministry of Trade, Ministry of Finance, Office of Trade and Office of Tax at Local Government.
Scheme	

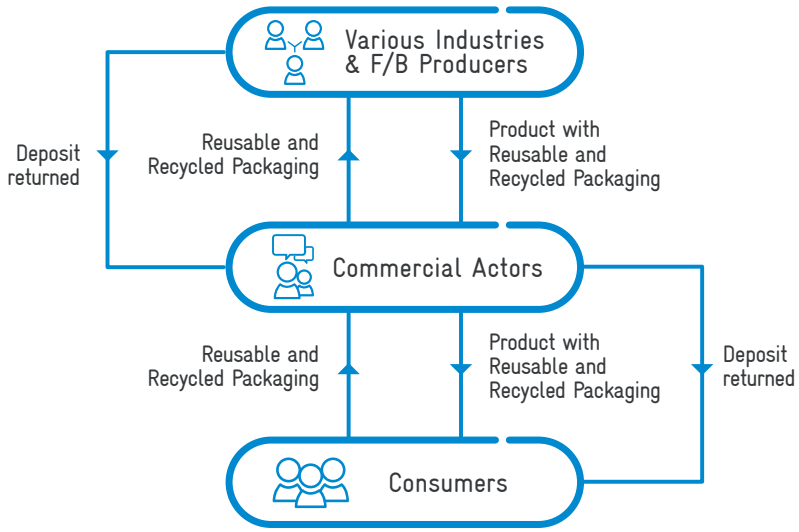
i. Consumer Rebate

Description	• Rebate is provided to Commercial Actors (Traders), and consumers as discount for purchasing reusable and recycle content packaging. • The amount of the rebate could correlate with the income tax deduction various industries and F/B Producers are granted for using reusable and recyclable content packaging.
Implementation	Thailand has implemented it with notable success in leading supermarkets, shopping malls, mega stores, convenience stores, and coffee shops.
Target Entities	End consumers and commercial actors
Opportunities	• Encourages end consumers to purchase products with reusable and recycled content packaging. • Helps to raise public awareness about the SUP packaging problem. • Supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 in reuse and waste recycling. • It could also be implemented in combination with an ecolabelling system.
Challenge	• Good cooperation with the private sector is required. • Would work better if combined with disincentive schemes to create the push-pull effect towards behavioural change. • Budget is possibly taken from the national or sub national governments.
Institution	Ministry of Finance, Ministry of Trade, Local Governments
Scheme	



j. Deposit Return System (DRS)

Description	• DRS is a system where a deposit is charged if a product with a certain packaging is purchased. The deposit is repaid once the empty packaging is returned to a point-of-sale. • There are one-way deposits (for items collected for recycling) and two-way deposits (for reusable items e.g., glass, thicker plastic bottles). At the first stage, two-way deposits for reuse will be prioritised. • Consumers can use the DRS to avoid part of the packaging cost.
Implementation	• The system has been broadly applied in European countries (e.g., Germany, Norway, Sweden, Denmark, the Netherlands), Hong Kong, Taiwan, South Korea, Japan, Canada, and Indonesia. Some states in the USA have already successfully adopted this measure. • The most common products are food and beverage containers, cosmetics packaging, and cleaning products.
Target Entities	End consumers
Opportunities	• The measure effectively creates an incentive to return empty containers, so that they can be reused. Also known as deposit-refund system, deposit-return system, take-back-scheme/system or advance deposit fee. • The flow of used packaging and money between goods producers (industries and F/B producers) and consumers could be realised by commercial actors or certain collecting points. • The system is applied at the local level. • It helps to create a system for empty SUP packaging to be retrieved to foster a reuse-oriented mindset in the public. • It can be applied to products whose empty packaging can be detrimental to public health, such as fertilisers and pesticides.

Challenge	• The implementation of the system requires logistics cost but also time (consumers, retailers, and manufacturers). If the deposit is too low, the logistics costs will be too expensive and the consumer's time too valuable and the items might not be returned. • High-income citizens are less likely to participate for enhanced economic benefit. • More and better distributed collection points are required. • This measure will be more effective if coupled with the Extended Producers Responsibility measure. • It may be applied with the 'Reuse-As-A-Service' model on food delivery/takeaways where the service providers expect the packaging/container to be returned after use for reuse.
Institution	Office of Trade at the local level and/or Local Public Service Agency (BLUD)
Scheme	

k. Extended Producer Responsibility (EPR)

Description	• Policy approach that extends the responsibility of the producers—financial and/or physical— beyond the use of their products, e.g., to the treatment or disposal of post-consumer products/waste. • The Extended Producer Responsibility policy is applied to various industries and F/B producers for the plastic packaging used in their products.
Implementation	• Germany was the first country to adopt this measure through the German Packaging Ordinance (1991) for packaging waste.

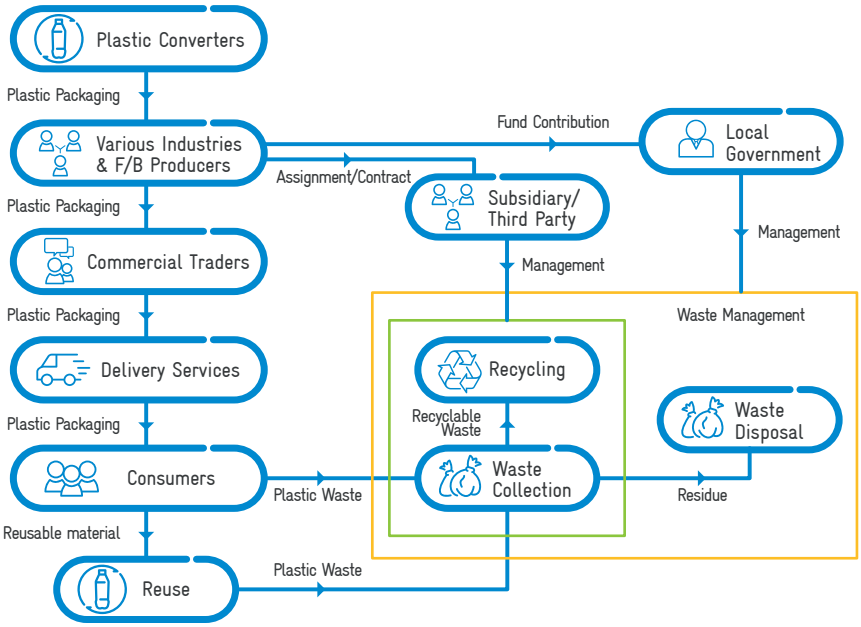
	• It has now been implemented in many countries in Europe, Asia (Japan, Korea, Taiwan, India, Vietnam), and North America. • A voluntary EPR program was launched in December 2021, and the on-ground implementation is expected in three municipalities of Chonburi Province, Thailand, later in 2022. • Indonesia promotes EPR by issuing Ministerial Regulation of The Minister of Environment and Forestry 75/2019.
Target Entities	Manufacturers (F&B, consumer goods, personal care), F&B services (hotel, Restaurants, cafés, catering services), retailers (shopping malls, modern market, traditional market).
Opportunities	• Industries and F/B producers can live up to their responsibilities by: 1) making a financial contribution to the local government for waste management; or 2) collecting and recycling their plastic waste by either contracting a third party or assigning a subsidiary. • Provides incentives to prevent the accrual of waste at the source, promotes the eco-design of the products. • Supports the achievement of public recycling and materials management goals. • Minimises littering on land, marine, and coastal areas and helps extend the life of landfills. • Enables relatively clean return of recyclable packaging back into the system. • Supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 in reuse.
Challenge	• An effective EPR implementation requires clear guidelines defining the scope, roles, and responsibilities of different stakeholders, price structure, and the supporting infrastructure. • EPR fees must also be set high enough to discourage the use of non-recyclable packaging and to incentivise environmentally friendly packaging. • Smaller plastic packaging producers must be engaged to share the cost and prevent free riders (i.e., companies that do not bear handling and disposal costs but enjoy the benefits of an EPR programme).

- If not carefully designed, an EPR may create a lock-in leading to thermal recovery rather than a meaningful reduction, reusability, and recyclability of packaging. To prevent that from happening, the EPR fee could also factor in reusability and recyclability. Additional policies may also be needed to help promote reusability and recyclability.

Institution

Environmental Agency, Public Service Agency at the local level (BLUD) or, Producer Responsibility Organisation (single or multiple).

Scheme



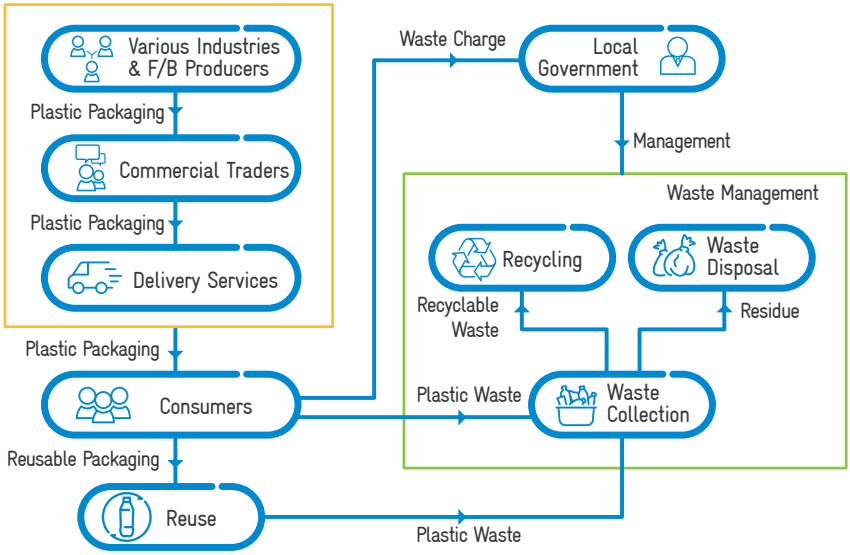
I. Waste Charge

Description

- The Advanced Disposal Fee (ADF) or a specific waste charge for plastic packaging is applied to the end consumers (household unit).
- It is paid to the local government as a financial contribution to manage waste, ranging from the collection of waste to the final waste treatment.
- Ideally, the amount of the charge correlates with the amount of waste generated by a household.
- The unit price of the charge could differ based on the consumers' ability to pay (income level of the household).

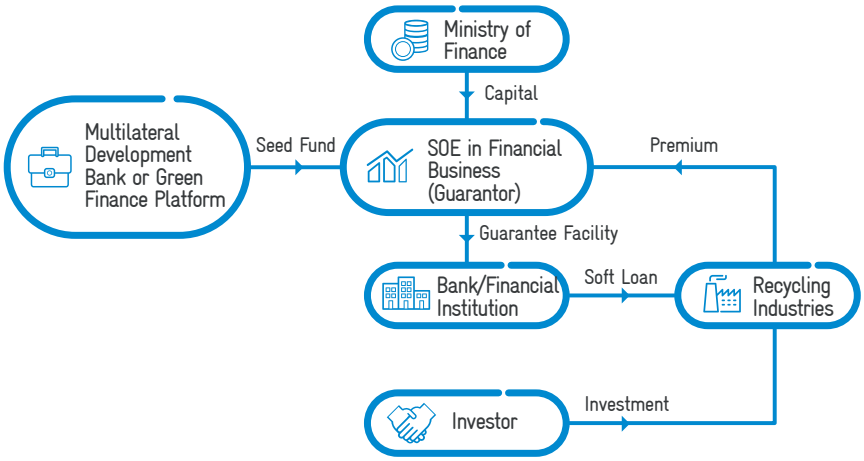
Implementation

- Several U.S. states, Canada, and European countries as well as South Korea.

	• Jars, bottles, cans, and beverage containers made of glass, plastic, plastic-coated paper, and mixed material are examples of containers with an ADF charge. • Containers used for medicine, medical devices, drugs, or other medical items are exempt in some countries. • Containers made of materials with a set recycling content target (e.g., 30% or 50%), such as aluminium and steel containers, are usually not subject to the ADF.
Target Entities	End consumers
Opportunities	• The measure can influence both consumers' and manufacturers' behaviour towards SUP prevention. • Contributes to increasing recycling rates when ADFs are used to support the collection and recycling programmes; however, they do not incentivise the participation in those programs. • Supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 in waste reduction and reuse.
Challenge	• The application should be supported by a good waste segregation and waste collection system. • The capacity of local waste management stakeholders should be improved. • It should be applied in combination with other programmatic approaches such as Proklim (MoEF). • Without clear communication, consumers may not be aware of the ADFs, which would have an adverse effect on the purpose of the measure.
Institution	Environmental Agency of the Local Governments
Scheme	

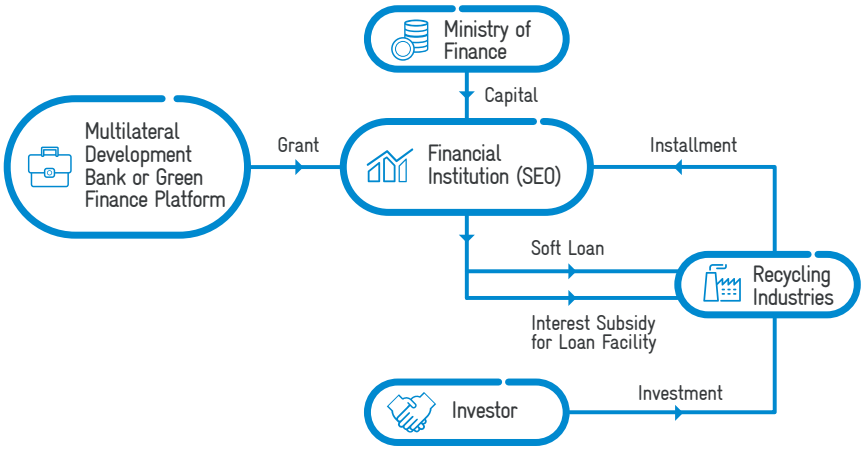
m. Guarantee Facility for Recycling Investment

Description	• Guarantee Facility is a financing facility provided by the Guarantor (can be supported by Government) to certain • companies/investors as an option of de-risking mechanisms to boost the recycling industries. • Guarantee Facility is provided to companies/investors for developing recycling industries. • The facility is provided as a credit guarantee by a guarantor for a bank loan to build recycling facilities.
Implementation	• Guarantee facilities have been applied in many countries including Indonesia particularly to accelerate infrastructure development. • It is also applied to advance the implementation of Public Private Partnerships in infrastructure development.
Target Entities	Companies/Investor in recycling industries
Opportunities	• The guarantee aims at increasing the bankability of recycling industries and/or at increasing the lender's appetite for providing soft loan facility to boost recycling businesses. • Multilateral Development Banks and Climate Finance Platforms such as Green Climate Funds provide financing sources for a guarantee facility. • Indonesia has established the Indonesia Infrastructure Guarantee Funds as SOE, under the MoF that can be used for channelling this facility into plastic recycling investments. • It supports the implementation of the Minister of Environment and Regulation No.75 of 2019 in waste recycling.
Challenge	• There will be a premium that should be paid by the recycling industries to guarantor. • Eligibility criteria should be developed clearly. • Ministry of Finance could be involved and there is a risk that the facility might require fiscal support.
Institution	SOE as guarantor

Scheme	

n. Interest Subsidy and Soft Loan for Recycling Investment

Description	• Interest Subsidies and Soft Loans are financing measures that can be provided to recycling investors or industries. • Interest Subsidies and Soft Loans can be provided by SOEs or other appointed financial institutions to support recycling investments with funding at low cost. • In return, plastic producers and converters pay an instalment to Financial Institutions.
Implementation	• Interest subsidies and soft loans have been applied in many countries including Indonesia particularly to accelerate infrastructure development. • Those measures are also applied to boost the implementation of green projects and to advance the implementation of Public Private Partnerships in infrastructure development.
Target Entities	Companies/Investors in recycling industries
Opportunities	• Interest subsidies and soft loans aim at increasing the bankability of recycling industries and/or at increasing the lender's appetite to boost recycling businesses. • Multilateral Development Banks and Climate Finance Platforms such as Green Climate Funds provide financing sources for soft loans and certain grants for interest subsidies. • There are some SOE options that can be used for channelling this facility into plastic recycling investments. • The scheme could also be implemented at the local level by involving local banks. • It supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 in waste recycling.

Challenge	• Clear eligibility criteria should be developed. • The Ministry of Finance could be involved and there is a risk that the facility might require fiscal support. • Most likely, it should be managed under a loan scheme linked to sustainability.
Institution	Financial Institution SOE, Ministry of Finance
Scheme	

o. Interest Subsidy and Low-Cost Import Financing

Description	• Interest subsidies and low-cost import financing facilities are provided to recycling industries. • Those measures could be provided by an SOE (Indonesian Exim Bank) for financing the import of machinery and equipment to build recycling facilities.
Implementation	• Interest subsidies and low-cost import financing have been applied in many countries including Indonesia particularly to introduce greener technology in certain industries. • Those measures are also applied to boost the implementation of green projects.
Target Entities	Investors in recycling industries
Opportunities	• Interest subsidies and low-cost import financing in import activities aim to increase the bankability of recycling industries and/or to increase the lender's appetite to boost recycling businesses. • It could also contribute significantly to promote green industries and cleaner production.

- Multilateral Development Banks and Climate Finance Platforms such as Green Climate Funds provide financing sources for soft loans and certain grants for supporting this objective.
- Indonesia has established the Indonesian Exim Bank as an SOE that can be used for channelling this facility into plastic recycling investments.
- It supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 in waste recycling.

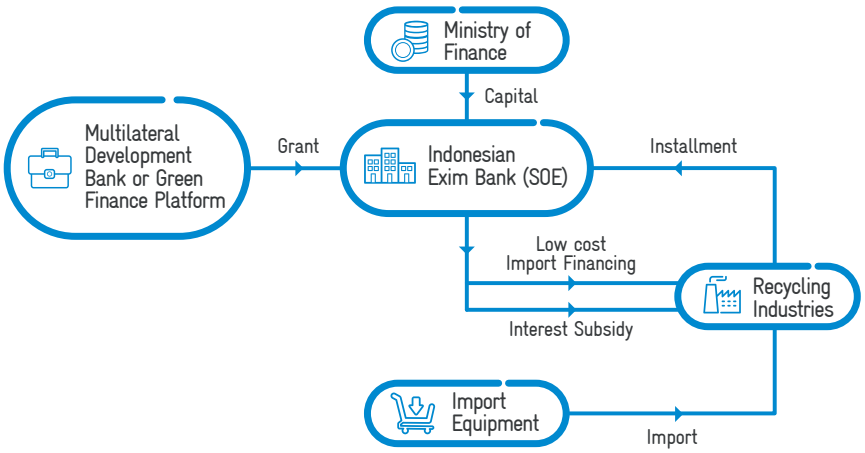
Challenge

- The development of recycling industries does not need a lot of imported high technology.
- Clear eligibility criteria should be developed.
- The Ministry of Finance could be involved and there is a risk that the facility might require fiscal support.

Institution

Ministry of Finance and Indonesian Exim Bank

Scheme



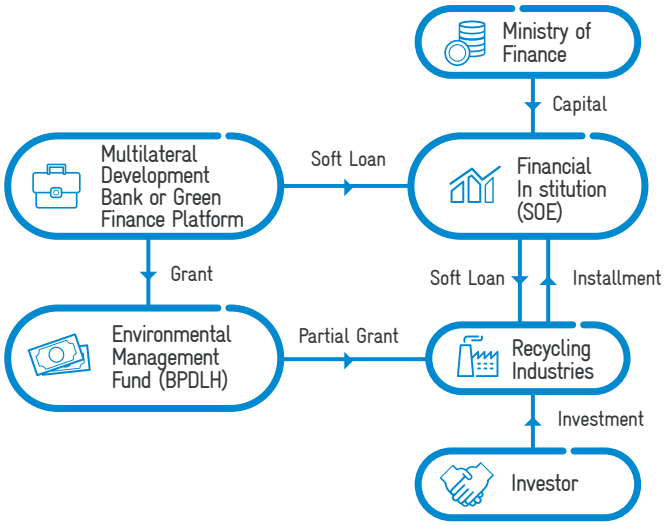
p. Partial Grant for Recycling Investment

Description

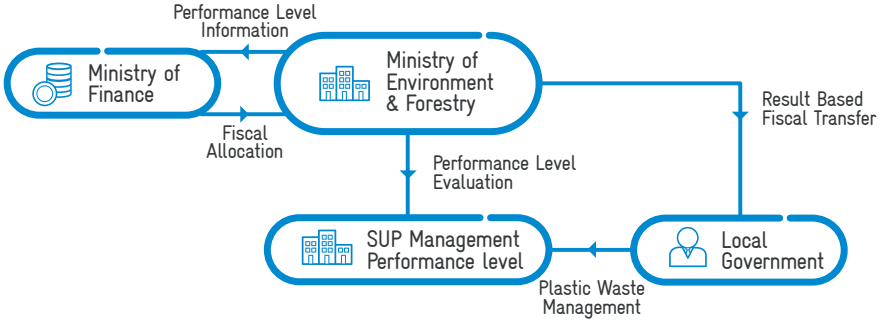
- Partial Grants as a financial measure can be provided to recycling industries to reduce the investment needed for developing recycling facilities.
- Partial Grants could be provided by the Environmental Management Fund Agency (BPDLH) for supporting recycling investment.

Implementation

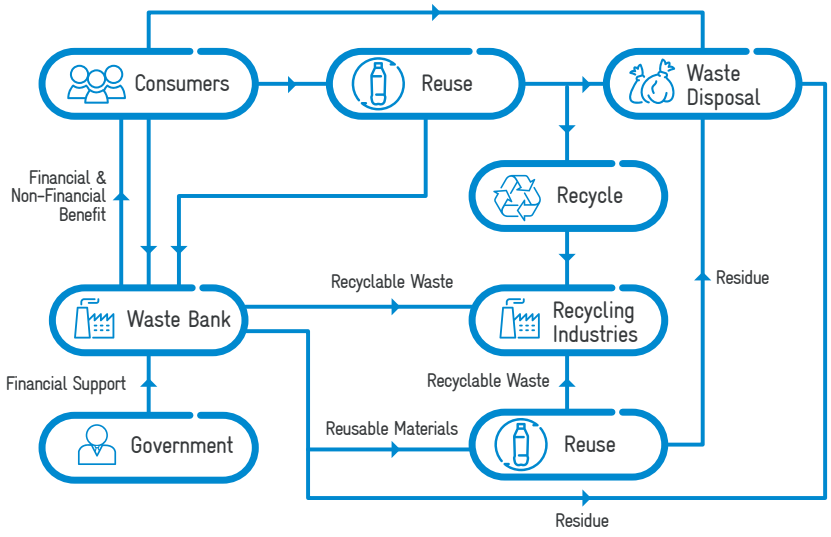
- Partial grants supporting investments have been applied in many countries including Indonesia particularly to accelerate infrastructure development.
  The measure has also been applied to boost the implementation of green projects.

	• The Government of Indonesia provides a Viability Gap Fund (VGF) with a maximum investment value of 49% as a partial grant to advance the implementation of Public Private Partnerships in infrastructure development. In this case, the grant is provided in cash by the Ministry of Finance to eligible private entities as government partner in implementing PPP projects.
Target Entities	Investors in recycling businesses
Opportunities	• Partial grants aim at increasing the bankability of recycling industries and/or the lender's appetite to boost recycling businesses. • It could also contribute significantly to promote green industries and cleaner production. • Multilateral Development Banks and Climate Finance Platforms such as Green Climate Funds provide certain grant facilities for supporting this objective. • Indonesia has established the BPDLH as a unit of the Ministry of Finance that can be used for channelling this facility into plastic recycling investments. • It supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 on waste recycling.
Challenge	• Clear eligibility criteria should be developed. • The Ministry of Finance should be involved and there is a risk that the facility might require fiscal support. • Most likely, it should be managed under a loan scheme that is linked to sustainability.
Institution	Ministry of Finance and BPDLH
Scheme	

q. Result-based SUP Performance Fiscal Transfer to Local Government

Description	• Fiscal transfers are provided by the national government to local governments to support SUP prevention efforts. • The amount of money transferred is based on the performance of local governments in managing and controlling SUP. • Performance evaluations are conducted the by Ministry of Environment and Forestry (MoEF). The results are submitted to the Ministry of Finance (MoF). • MoF allocates budget to MoEF, then MoEF transfers money to the local government (specific allocation fund) for municipal waste management purposes.
Implementation	• Competitive budget allocation programmes have been implemented by the Government of Indonesia in various sectors. • In the waste management sector, the Adipura Award was implemented a long time ago for providing non-financial incentives for cities with a good waste management performance.
Target Entities	Local Governments (Provincial, Municipal, and Regency)
Opportunities	• As has been the case with the Adipura Award, it can encourage local governments to perform better in SUP prevention. • It supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 in general.
Challenge	• Lack of the local government's budget availability for waste management. • Ideally, it should be implemented in combination with other relevant financial measures.
Institution	Ministry of Environment and Forestry and relevant institutions within local governments (e.g., The Environmental Agency).
Scheme	

r. Waste Bank Incentive

Description	• Incentives related to waste banks in waste management could be: 1) provided by the waste bank to consumers as a financial or non-financial benefit and 2) provided by the government (both national and local) to waste banks, as financial support for the waste bank's further development. • Financial/non-financial benefits for consumers are related to the amount of reusable and recyclable materials deposited by consumers at the waste bank. • Financial support from the government is based on the performance of the waste bank.
Implementation	Incentives for waste banks have not been consistently applied through a sound system at the national and local level.
Target Entities	Waste banks
Opportunities	• Encourages waste banks to improve their performance. • Waste banks will contribute to municipal waste management system. • Waste banks will also contribute to waste segregation and waste collection, which supports recycling activities. • It supports the implementation of the Minister of Environment and Forestry Regulation No.75 of 2019 in waste recycling.
Challenge	• Revitalisation of waste banks is necessary. • The formal integration of waste banks into the municipal solid waste management is crucial for ensuring sustainable waste banks.
Institution	Ministry of Environment and Forestry, the Environmental Agencies of local governments and waste banks.
Scheme	

3.2 Selection of Potential Measures

The longlist of economic and fiscal measures is selected to identify ten potential measures that will be discussed further with relevant government and non-government stakeholders. There are 4 selection criteria used for identifying potential measures:

Impact Level 30% | Readiness Level 30% | Success Reference 15% | Potential Mobilisation of Various Funding Sources 25%

For each criterion, there are five categories that correspond to the score given as described in the following table. Each measure was assessed based on the status of the measure compared to the categories in Table 3-1. The results of the selection are described in Table 3-2.

	CRITERIA			
SCORE	IMPACT LEVEL (30%)	READINESS LEVEL (30%)	SUCCESS REFERENCE (15%)	MOBILISATION OF VARIOUS FUNDING SOURCES (25%)
01	The measure has a very low impact on packaging reduction and plastic recycling improvement	The measure has a very low level of readiness related to regulations, institutions, and other supporting infrastructure for its implementation	The measure has no implementation success stories in Indonesia, other countries or other sectors in the country	The measure has very low potential to mobilise various funding sources, both government and non-government funding
02	The measure has a low impact on packaging reduction and plastic recycling improvement	The measure has a low level of readiness related to regulations, institutions, and other supporting infrastructure for its implementation	The measure has very few implementations success stories in Indonesia, other countries or other sectors in the country	The measure has low potential to mobilise various funding sources, both government and non-government funding
03	The measure has a medium impact on packaging reduction and plastic recycling improvement	The measure has a medium level of readiness related to regulations, institutions, and other supporting infrastructure for its implementation	The measure has a few implementations success stories in Indonesia, other countries or other sectors in the country	The measure has medium potential to mobilise various funding sources, both government and non-government funding
04	The measure has a high impact on packaging reduction and plastic recycling improvement	The measure has a high level of readiness related to regulations, institutions, and other supporting infrastructure for its implementation	The measure has quite a number of implementation success stories in Indonesia, other countries or other sectors in the country	The measure has high potential to mobilise various funding sources, both government and non-government funding
05	The measure has a very high impact on packaging reduction and plastic recycling improvement	The measure has a very high level of readiness related to regulations, institutions, and other supporting infrastructure for its implementation	The measure has many implementations success stories in Indonesia, other countries or other sectors in the country	The measure has very high potential to mobilise various funding sources, both government and non-government funding

Table 3 1. Criteria for Potential Measures Selection

No.	Measures	CRITERIA				Score	Rank
		Impact Level	Readiness Level	Success Reference	Mobilisation of Various Funding Sources		
		0.3	0.3	0.15	0.25		
1.	Tax on Virgin Materials	4	1	1	1	1.9	
2.	SUP Packaging Levies	4	4	4	3	3.75	4
3.	Plastic Credit	3	1	1	3	2.1	
4.	Tax Incentive for Recycling Investment	4	4	4	4	4.0	4
5.	Green Public Procurement	3	4	3	3	3.3	10
6.	Tax on non- recyclable plastic	3	3	3	3	3.0	
7.	Tax deducation for the use of recyclable plastic material	4	3	3	4	3.55	5
8.	Tax deducation for using reusable and recycled content packaging	4	3	3	4	3.55	6
9.	Consumer's rebate	4	3	3	4	3.55	7
10.	Deposit return system	3	4	5	2	3.55	9
11.	Extended producer Responsibility	3	3	4	4	3.4	8
12.	Waste Charge	3	2	3	2	2.45	
13.	Guarantee Facility for recycling investment	4	2	3	3	3.0	
14.	Interest Subsidy and Low-cost import financing	4	3	4	5	3.95	3
15.	Interest Subsidy and Low-cost import financing	3	3	3	3	3.0	
16.	Partial Grant for Recycling Investment	4	4	4	5	4.25	1
17.	Result-based SUP Performance Fiscal Transfer to Local Government	3	4	4	1	2.95	
18.	Waste Bank Incentives	3	4	4	2	3.2	

Table 3 2. Result of Potential Measures Selection

Chapter 4. SWOT Analysis of Potential Economic and Fiscal Measures

Based on selection process conducted earlier by considering four criteria: (i) impact level, (ii) readiness level, (iii) success reference, and (iv) potential mobilisation of various funding sources, ten measures were identified as can be seen in the table below. Those potential economic and fiscal measures have been implemented at various stages of the plastic life cycle, ranging from production, consumption, to post-consumption and waste management, and applied to various stakeholder target respectively.

Table 4 1. Potential Economic and Fiscal Measures

RANK	MEASURES	AREA OF INTERVENTION	STAKEHOLDER TARGET
1	Partial Grant for Recycling Investment	Post-Consumption and Production	Recycling Industries
2	Tax Incentive for Recycling Investment	Post-Consumption and Production	Recycling Industries
3	Interest Subsidy and Soft Loan for Recycling Investment	Post-Consumption and Production	Recycling Industries
4	SUP Packaging Levies	Consumption	Consumers
5	Tax Deduction for the Use of Recyclable Plastic Materials	Production & Intermediate Stage[9]	Plastic Producers and Converters
6	Tax Deduction for Using Reusable & Recycled Content Packaging	Intermediate Stage	Various Industries and F&B Producers
7	Consumer Rebate	Consumption	Consumers
8	Extended Producer Responsibility	Production, Consumption & Post-Consumption	Upstream and Downstream Stakeholder
9	Deposit Return System	Consumption	Consumers
10	Green Public Procurement	Consumption	Consumers

A SWOT analysis is conducted and applied to all potential measures to assess their implementation potential in Indonesia. Interviews with relevant respondents with various backgrounds (national government, sub-national government, academia, practitioners, legal

[9] *The intermediate stage refers to various phases of the plastic life cycle since plastic materials are produced until plastic products (e.g. packaging and SUP products) are consumed.*

experts, business entities, and civil society organisation) were also conducted to enrich the analysis. Series of interviews focused on discussing the potential application of potential economic and fiscal measures based on the level of readiness and expected impact level on single-use plastic reduction and packaging prevention.

4.1 Partial Grant for Recycling Investment

Partial Grants refer to a financial measure that can be provided to recycling industries to reduce the investment needed for developing recycling facilities. The Environmental Management Fund (BPDLH) under the Ministry of Finance is a potential entity for channelling the facility. It aims at supporting recycling investments particularly to increase the bankability of recycling industries and/or the lender's appetite to boost recycling businesses.

Table 4 2. SWOT Analysis for Partial Grants for Recycling Investment

STRENGTHS

- The Indonesian Government has experience in applying a similar scheme to accelerate infrastructure development, e.g., Viability Gap Fund (VGF) in the Public Private Partnership scheme.
- The Government has established the Environmental Management Fund under the MoF that has a mandate to facilitate and allocate grants for environmentally friendly projects.
- Partial Grants are considered concrete financial measures that can support recycling investments significantly, mainly by reducing the amount of equity and loan to develop recycling facilities.
- Partial grants can encourage financing institutions to issue a loan facility for supporting recycling businesses.

WEAKNESS

- BPDLH needs to the include waste management sector in their eligibility and priority sector, in particular the national priority programme.
- There is a possibility that the National Government should provide fiscal support to be channelled via BPDLH.
- BPDLH needs to conduct due diligence as a basis for making decisions in providing grants.
- BPDLH needs to cooperate with financial institutions that provide other financial support (loan and other facilities) to develop recycling businesses.

OPPORTUNITIES

- Multilateral Development Banks and other green or climate finance platforms provide certain grant facilities that can be used as funding sources.
- PermenLHK 75/2019 opens up opportunities to develop recycling business.
- It could also contribute significantly to promoting green industries and cleaner production.

THREATS

- Eligibility criteria for investors that can receive the facility should be developed.
- It most likely should be linked to government support projects.

Remarks:

- The measure can be provided by referring to a VGF application in Public Private Partnership Schemes for infrastructure development.
- The BPDLH could play a significant role to avoid fiscal support that should be provided by Ministry of Finance. However, fiscal support is required if the BPDLH cannot find a suitable grant from development partners that can fund the facility.
- From a legal point of view, a partial grant can be applied via the BPDLH, considering its tasks, responsibility, and mandate. However, the BPDLH needs to include the waste management sector as an eligible priority sector. It is also in line with the national plastic waste management target.
- Close coordination and consultations among relevant government agencies remains important to set up a robust and thorough Standard Operational Procedure.

4.2 Tax Incentive for Recycling Investment

Tax incentives are granted to Plastic Industries for the development of plastic recycling factories/facilities for commercial purposes or internal consumption. Tax Incentives, which are provided by the national government, could be granted as import tax holiday, import tax deduction, value added tax deduction, etc. The amount of tax incentives correlates with the investment amount.

Table 4 3. SWOT Analysis of Tax Incentives for Recycling Investment

STRENGTHS

- It can encourage investors to build recycling facilities and recycling businesses.
- It reflects the strong support of the government for the recycling industry.
- In the end, it can have a positive impact on the price competitiveness of recycled materials on the national market.
- It can also ensure the availability of affordable recycled materials on the market.

WEAKNESS

- The measure has a direct impact on the state finances.
- A complex analysis and calculation are needed to define the level of the tax incentives.
- Clear eligibility criteria and baseline need to be determined.
- The measures should be supported by strengthening waste management system, e.g., waste segregation and collection, to ensure the quantity and quality of recyclable materials going into the recycling process.
- Imported recyclable materials will undermine efforts to promote the circular economy, Three R's principle in the country

OPPORTUNITIES

- The scheme is suitable based on a business point of view.
- There is a possibility that big industries will build their own recycling facility for internal use.
- It fits the government policies related to waste management and the roadmap for waste reduction by producers.
- It could also contribute significantly to promote green industries and cleaner production.

THREATS

- Tremendous pressure on the state budget due to the pandemic.
- The application of tax incentives needs a strong regulatory basis. The preparation of said regulation will require a considerable amount of time.
- There is a possibility that producers continue to make complex plastic packaging (e.g., flexible plastics) which is difficult and costly to recycle.
- If the import of plastic waste is allowed to continue, it will undermine efforts to increase recycling business in the country.
- The application of the measure needs to be combined with other financial measures.

Remarks:

- The government should conduct an integrated analysis to define eligibility criteria, the level of the incentive and a baseline calculation as a basis for implementing the policy.
- Since the application of the measure should be supported by a better waste management system, the government should take the necessary steps to improve all sub-systems in the waste management sector, particularly in the area in which SUP and packaging are majorly consumed.

- From a legal perspective, the application of the measure requires a lengthy and thorough preparation. Thus, it cannot be categorised as a low-hanging fruit option. Even though it is legally actionable, the policy development will be complex since it involves a lot of stakeholders including the parliament. Recent development related to the pandemic and global economic recession render this measure a poor option for being implemented in the near future.

4.3 Interest Subsidy and Soft Loan for Recycling Investment

Interest Subsidies and Soft Loans are financing measures that can be provided to recycling investors or industries with the involvement of the government. The facility is potentially provided by an SOE or another appointed financial institutions to support recycling investments with a low cost of funding.

Table 4 4. SWOT Analysis of Interest Subsidy and Soft Loan for Recycling Investment

STRENGTHS

- The Government has applied a similar scheme to accelerate infrastructure development.
- It has also been applied to support the Public Private Partnership scheme.
- There are several entities that can potentially play a role in channelling the facility, such as national banks (SOE), local banks (owned by provincial governments), and non-bank financial institutions such as PT Sarana Multi Infrastruktur (PT SMI).
- Interest subsidies and soft loans are considered real financial measures that can support recycling investments significantly, mainly to increase the lenders' appetite for developing recycling facilities.
- It can attract investors to invest in recycling businesses.

WEAKNESS

- Potential Financial Institutions need to include the waste management sector into their eligibility and priority sector portfolio.
- There is a possibility that national or provincial governments should provide fiscal support to be channelled via respective financial institutions as additional capital (marking for recycling business support).
- Each Financial Institution needs to conduct due diligence as a basis for making decisions about granting a soft loan facility or an interest subsidy.
- Cooperation among financial institutions that provide other financial support (loan and other facility) to develop recycling business is possibly needed.

OPPORTUNITIES

- The Multilateral Development Bank (MDB) and other green or climate finance platforms provide certain loan facilities that can be used as funding sources. Some of them provide grant facilities that can be used as funding sources for interest rate subsidies.
- PermenLHK 75/2019 opens up opportunities to develop recycling businesses.
- It could also contribute significantly to promote green industries and cleaner production.
- It is suitable with ESG promotion within financial institutions.

THREATS

- Eligibility criteria of investors should be developed.
- It most likely should be linked to government support projects.
- It most likely should fall under a loan facility that is linked to sustainability.
- Lack of readiness to finance projects in recycling businesses that suit the MDB's requirements.

Remarks:

- The measure is possible to be provided similar with the scheme applied by the Government in accelerating infrastructure development.
- Financial institutions need to conduct a due diligence process to assess the potential projects from a financial, technical, legal, environmental, and social point of view.
- The government or each financial institution needs to develop eligibility criteria as a basis for granting the facility.
- Financial Institutions could play a significant role to avoid fiscal support that should be provided by the MoF. However, fiscal support is required if low-cost funding sources and suitable grants from development partners are not available.
- From a legal point of view, the facility could be provided by relevant financial institutions as long as eligibility criteria are developed and integrated and a due diligence process is conducted.

4.4 Single-Use Plastic Packaging Levies

The measure is applied to end consumers for purchasing products with SUP packaging. Levies are integrated into the SUP packaging price and paid by the consumers to the sellers as a collecting point, who will further pass on the collected levies to the sub-national government[10]. It aims at discouraging the consumption of SUP packaging by influencing consumers' and manufacturers' behaviour towards using more reusable packaging.

[10] *Levies will be part of the revenue generated by the sub-national governments.*

Table 4 5. SWOT Analysis of Single-Use Plastic Packaging Levies

STRENGTHS

- The measure can create a condition for discouraging the consumption of SUP packaging.
- It corresponds to the 'Polluter Pays Principle'.
- Levies collected could be used as additional funding sources to improve municipal waste management systems.
- The scheme is in line with the roadmap for waste reduction by producers as regulated in PermenLHK 75/2019.

WEAKNESS

- It should be combined with adequate efforts related to reuse and recycling.
- The levy rate will most likely have no significant financial impact for high earners.
- It may lead to the use of other types of packaging whose production requires even more energy/resources.
- A flow of funds should be created and disclosed transparently.

OPPORTUNITIES

- Similar schemes, such as paid packaging systems, have been implemented in many cities in Indonesia. However, they did not generate additional government revenue.
- In some cities (e.g., Jakarta, Bali, Balikpapan), the existing scheme could change the consumers' behaviour significantly toward using more reusable bags.
- The measure is in line with various plastic reduction campaigns promoted by the government and civil society organisations.

THREATS

- Although the national government could provide general guidance, the system is applied at a local level. Therefore, local government need to develop more capacities.
- A solid flow of funds should be developed at the local level involving local governments and commercial centres.
- The system faces difficulties in covering traditional markets.

Remarks:

- The measure is considered as an expansion of existing paid plastic carrier bags that have been introduced in many cities in Indonesia.
- From a legal point of view, the decision to apply additional local government SUP levies is a matter of the local government authorities.
- The levy rate could vary depending on the policy approach of each local government.
- Close coordination and consultations among relevant government agencies (at the national and sub-national level) and private sector groups are crucial.
- It is important to involve relevant offices within the local government and groups of commercial actors to prepare a working plan. Existing local working groups (e.g., Pokja Perubahan Iklim or the working group on smart cities) could be used as a communication forum.

4.5 Tax Deduction for the Use of Recycled and Recyclable Plastic Materials

A tax deduction is provided to Plastic Producers and Converters for using recyclable materials to produce plastic packaging. It could be either provided by the national government or by local governments, depending on the type of tax deduction. The tax rate correlates with the amount of recyclable plastic material used for producing recyclable plastic or packaging.

Table 4 6. SWOT Analysis of Tax Deduction for the Use of Recyclable Plastic Materials

STRENGTHS

- As a concrete financial incentive, it can encourage plastic producers and converters to activate their recycling facilities and recycling business.
- It reflects the strong government support for the recycling industry.
- In general, it can support the development of recycling businesses.
- It could develop the market for recycled materials and the price competitiveness of recycled products on the market.
- It could increase the availability of affordable recycled materials on the market due to increasing supply.

WEAKNESS

- The measure has a direct impact on the national finances.
- A complex analysis and calculation are needed to define the rate of tax incentives.
- Clear eligibility criteria and a baseline value need to be determined.
- The development of the recycling business in general should be supported by strengthening the waste management system, such as waste segregation and collection, to ensure the right quantity and quality of recyclable materials going into the recycling process.
- Imported recyclable materials will undermine national efforts to promote the circular economy and the Three R's (reduce, reuse, recycle) in Indonesia.
- It has a lower impact on waste reduction and reuse.
- Recyclable material in theory may still not be recycled in practice due to a lack of local infrastructure.

OPPORTUNITIES

- It could indirectly encourage waste segregation at the sources.
- The scheme is suitable from a business point of view, since it can be considered "cost-effective" or as a "a revenue stream"
- It is in line with the government's policies on waste management and the roadmap for waste reduction by producers.
- It could also contribute significantly to the promotion of green industries and cleaner production.

THREATS

- The pandemic has exerted tremendous pressure on the government's financial resources.
- The application of tax incentives requires a strong regulatory basis. The preparation of said regulation will require considerable time.
- Producers might continue to manufacture complex plastic packaging (e.g., flexible plastics) which is difficult and costly to recycle.
- If the import of plastic waste is allowed to continue, it will undermine efforts to increase the recycling business in the country.
- The application of the measure needs to be combined with other financial measures.

Remarks:

- The government should conduct an integrated analysis to define different eligibility criteria, the rate of the incentive and a baseline calculation as a basis for implementing the measure.
- Since the application of the measure should go hand in hand with a better waste management system, the government should take the necessary steps to improve all waste management sub-systems, particularly in the area where SUP and plastic packaging are mainly consumed.
- From a legal point of view, the application of the measure requires a lengthy and thorough preparation. Thus, it cannot be categorised as a low-hanging fruit option. Even though it is legally actionable, the policy development will be complex since it involves a lot of stakeholders, including the parliament. Recent developments related to the pandemic and the global economic recession render this measure a poor option for being implemented in the near future.

4.6 Tax Deduction for Using Reusable and Recycled Content Packaging

The tax deduction is provided by the national government or local governments to relevant business entities (various industries and F/B Producers) for using reusable and recycled content packaging for their products. The tax rate correlates with amount of reusable and recycled content packaging used for their products.

Table 4 7. SWOT Analysis of Tax Deduction for Using Reusable and Recycled Content Packaging

STRENGTHS

- This tax incentive is a concrete financial incentive that can encourage relevant business entities to use reusable and recycled content packaging.
- It reflects the strong government support for reusable and recycled content packaging.
- It promotes a "reduce, reuse, recycle" mindset when it comes to product packaging and reducing SUP packaging.
- It could boost the market for recycled content packaging.
- It stimulates the consumption of recycled packaging or non-SUP packaging.

WEAKNESS

- The measure has a direct impact on the national finances since it will reduce tax revenue.
- A complex analysis and calculation are needed to define the rate of the tax incentives. The UK Packaging Tax Regulation can serve as a reference.
- Clear eligibility criteria and a baseline need to be determined.
- It may result in rising product prices, at least initially.

OPPORTUNITIES

- It helps to achieve the country's goals in regard to the circular economy, climate change, and other related objectives.
- The scheme is suitable from a business point of view, since it can be considered "cost-effective" or a "revenue stream"
- It complies with the government policies on waste management and the roadmap for waste reduction by producers.
- It could also contribute significantly to promote a behavioural change towards a greener lifestyle.
- It can also be applied at the local level with initiatives from local governments.

THREATS

- The pandemic has exerted tremendous pressure on the government's financial resources.
- The application of tax incentives requires a strong regulatory basis, which will require considerable time.
- The application of the measure needs to be combined with other financial measures.
- The certification process for eligible products takes a long time, which might be inconvenient for brand owners and lead to a lower participation
- There is a risk that consumers may not accept reusable packaging for certain products, such as food.

Remarks:

- Considering the existing pressures related to the global economic situation, there will be a decrease in the national tax revenue.
- The government should conduct an integrated analysis to define different eligibility criteria, the rate of the incentive and a baseline calculation as a basis for implementing this measure.

- The application of the measure requires a certification as a basis for determining the eligibility criteria. The application and verification processes must be clear, streamlined, and relatively easy. The capacity of the verifying agencies that would be established needs to be further developed so that they can process a high number of applications. A labelling system could also be considered.
- From a legal point of view, the application of the measure requires a lengthy and thorough preparation. Thus, it cannot be categorised as a low-hanging fruit option. Even though it is legally actionable, the policy development will be complex since it involves a lot of stakeholders, including the parliament. Recent developments related to the pandemic and the global economic recession render this measure a poor option for being implemented in the near future.

4.7 Consumer Rebate

A rebate is granted to commercial actors (traders) and consumers as a discount for purchasing reusable and recycled content packaging. The amount of the rebate could correlate with some part of income tax deduction enjoyed by various industries and F/B producers for using reusable and recycled content packaging. This measure aims at discouraging consumers from using SUP packaging or buying SUP-packaged products. It encourages the "reduce, reuse, recycle" mindset.

Table 4 8. SWOT Analysis of Consumer Rebate

STRENGTHS	WEAKNESS
▶ It could encourage end consumers to purchase products with reusable and recycled content packaging. ▶ It helps to raise public awareness about the SUP packaging problem. ▶ The implementation does not need additional regulation as long as it is not linked to tax deductions. ▶ If it were linked to tax deductions, it would reflect the government's commitment to preventing SUP packaging.	▶ If the rebate is linked to tax deductions enjoyed by business entities, tax deduction measure should be applied first, leading to complex requirements. Besides, it will have an impact on the government's financial resources. ▶ If the measure is not linked to tax deductions, business entities should include the rebate in their financial model.

OPPORTUNITIES

- The measure has been implemented at several locations, so it be easily replicated.
- Since it has already been implemented in certain stores and shopping malls, consumers are already familiar with the measure.

THREATS

- If the measure is not linked to tax deductions, business entities need to reduce their revenue as funding sources for consumer rebates.
- Companies with a lower revenue will not be interested in joining the programme.

Remarks:

- The implementation of the measure could vary, depending on each company and brand.
- The system should be uniform and consistent across retailers and shopping malls to prevent comparison and unnecessary competition for customers.
- It requires a good cooperation from the private sector/business entities.
- It will work better if combined with disincentive schemes to create the push-pull effect towards behavioural changes.
- It could also be implemented in combination with an eco-labelling system.
- The type of reward may be extended from cash discounts or selected items to other daily services (e.g., discount on utility fees, free internet airtime) and can be combined with other promotion campaigns from the participating stores to boost its attractiveness.
- From a legal perspective, the implementation of this measure is actionable particularly if it is not linked to tax deductions. It can be implemented based on business considerations. However, the sustainability of the programme could not be guaranteed. If the measure is linked to tax deductions, the sustainability of the programme will be ensured. However, regulation as a basis for implementation will be necessary, which is more complex and requires a considerable amount of time.

4.8 Extended Producer Responsibility (EPR)

The EPR is a measure based on the approach that responsibility is applied to business entities (various industries and F/B producers) for plastic packaging used in their products. The responsibility is extended beyond the use of their products, e.g., to the treatment or disposal of post-consumer products/waste.

EPR provides a significant responsibility, financial and/or physical, to producers for the collection, treatment, recycling, and disposal of packaging at the post-consumer stage. It also provides incentives to prevent wastes at the source, promotes the product's eco-design, and supports the achievement of public recycling and materials management goals.

Table 4 9. SWOT Analysis of Extended Producer Responsibility

STRENGTHS

- EPR is considered a measure for mobilising non-government resources in waste management.
- The measure is a disincentive to prevent waste accrual at the source.
- It supports the achievement of public recycling and materials management goals.
- It could reduce littering on land, marine, and coastal areas and helps extend the life of landfills.
- It could make sure that relatively clean recyclable packaging gets back into the system.
- General regulation and guidance are available (PermenLHK 75/2019).

WEAKNESS

- The participation in the EPR programme requires a strong commitment from the companies.
- Companies still argue that participating in the EPR programme causes additional costs for their business.
- More detailed technical guidelines for the implementation of the EPR programme are necessary.
- The waste management capacity of the local government should be strengthened.
- The security of the data, which is reported to the MoEF by the private sector through the reporting system, must be guaranteed.

OPPORTUNITIES

- Implementing the EPR will open up opportunities for private entities to do business as company partners in waste collection and recycling.
- There are opportunities for mobilising resources from business entities since EPR measures can be conducted through
  1.) providing funding for local governments in waste management; or
  2.) the collection and recycling of their plastic waste, which can be done by contracting a third party or assigning a subsidiary.
- It could contribute to reducing littering on land, marine, and coastal areas and helps extend the life of landfills.
- It makes sure that relatively clean recyclable packaging goes back into the system.
- It could support the introduction of the circular economy in the country.

THREATS

- Due to Covid-19, small and medium-sized enterprises face difficulties in joining the EPR programme.
- Ideally, it should be supported by the provision of collecting points that facilitate the collection of packaging.
- A flow of funding should be ensured if the EPR is conducted through funding from local governments.
- The receipt of the funding should be reported transparently.
- Environmental issues may arise if incineration facilities such as waste-to-energy and RDF are promoted in the country without educational/awareness campaigns on waste separation, the Three R's, the principles of a circular economy, or other measures to discourage wasteful behaviour.

Remarks:

- An effective implementation will require a robust technical guidance to establish the scheme, describe the roles of different players, types of packaging applied, costs, documentation needs, and penalties for non-compliance, etc.

- Small and medium-sized producers must be engaged and included in the scheme to maximise the impact.
- The EPR will be applied at the local level. Therefore, the capacity development of local governments is necessary.
- Local governments should mobilise formal and informal stakeholders to contribute to the EPR's implementation, particularly those active in waste segregation and waste collection.
- From a legal perspective, technical guidance should be provided by the government. Similar guidance on a local level could be developed by the local government. Local governments should strengthen their capacity and should establish a flow of funding. Task Forces at the national level and local level should be established.
- Ideally, the EPR could be combined with other measures such as the deposit return scheme to make it even more effective.

4.9 Deposit Return System

The Deposit Return System is a scheme where a deposit is charged if a product with a certain packaging is purchased. The deposit is paid back once the empty packaging is returned to a point-of-sale. Consumers can use the DRS to avoid part of the packaging cost.

Table 4 10. SWOT Analysis of Deposit Return System

STRENGTHS	WEAKNESS
The measure effectively creates an incentive to return empty containers, so they can be reused or recycled.	The application of the measure requires a well-established collection system. The number of collecting points must be increased as well.
The system has been implemented by some companies and can be replicated.	If the return points are not conveniently located, customers may choose to buy other brands that are not part of the deposit return system.
Relevant sub systems are relatively available.	There is a potential competition with informal waste collectors.
It could reduce littering on land, marine, and coastal areas and helps extend the life of landfills.	More investments are needed to build automatic collection points.
It contributes to advancing the circular economy in the country.	
The scheme does not have an impact on the government's financial resources.	

OPPORTUNITIES

- The flow of used packaging and money between goods producers (industries and F/B producers) and consumers could be accomplished by commercial actors or certain collecting points.
- Such schemes create high levels of recycling and recapture rates and are usually well accepted by the public.
- The system is applied at the local level.
- It helps to create a system for empty SUP packaging to be retrieved for recycling. It also promotes the "recycling and reuse" mindset in the public.
- There is no regulation needed to implement the system.
- If "reusable packaging" works, then the system can be adopted for "single-use products"

THREATS

- If the deposit is too low, high earners might not be interested in participating.
- Collection points should be built to cover residential areas, which will facilitate the return process for the consumers.
- Support from the government remains important, mainly for building disposal points.
- The national/local government may establish a regulatory framework to ensure the sustainability of the system.

Remarks:

- The measure can be applied through initiatives by private entities and does not require a complex regulatory framework.
- The Deposit Return System can be combined with the EPR system.
- Local governments could play a significant role in promoting this scheme and in providing support to involve informal waste collectors.
- From a legal point of view, this scheme is relatively simple. There is no complex regulation needed, since the implementation is based on business initiatives.

4.10 Green Public Procurement (GPP)

GPP is a system that promotes environmentally friendly goods and services in government procurement. There are various criteria that must be met so that a product or service can be categorised as environmentally friendly. The measure is categorised as a non-financial measure. It aims at causing a shift towards a more sustainable production and a greater focus on the reduction, reuse, and recycling of packaging materials by creating an increased market demand for recycled packaging and products, thereby encouraging more recycling investments in the country.

Table 4 11. SWOT Analysis of Green Public Procurement

STRENGTHS

- The government has experience in developing green product criteria and it can be expanded to green packaging criteria.
- The Government Procurement Office (LKPP) is working on GPP and SPP with the support of other ministries and development partners.
- GPP provides non-financial incentives in bidding process for bidders using green or recycled products.
- It promotes a sustainable production and circular economy, particularly related to plastic and packaging.
- It can contribute to the recycling business by increasing the demand for recycled plastic products.

WEAKNESS

- A GPP standard for plastics and packaging has neither been developed nor included in the LKPP requirements yet.
- Green products tend to be more expensive, so there is a risk that the procurement budget also increases.
- The quantity and quality of the green products cannot be guaranteed.
- Government support for the recycling industry and sustainable/recycled packaging and products is needed.

OPPORTUNITIES

- The measure targets government procurements due to their large volume of goods and services. Apart from products, such as paper, food, cleaning products, IT equipment, electrical appliances, lighting equipment, etc., GPP is also used for services, such as catering, events, and delivery systems, where packaging waste is one of the major issues.
- It could open up opportunity for packaging manufacturers that already invest into sustainable packaging.
- It can encourage more investments into recycling.
- It could potentially be applied on a national level as well as on a sub national level.
- GPP Guidance could be provided by the National Procurement Agency (LKPP) in coordination with the Ministry of Environment and Forestry and other relevant ministries.
- Details of non-financial incentives can be defined by the procurement committee.

THREATS

- It should ideally be combined with other schemes to ensure sufficient supply throughout the country.
- The human resources capacities of procurement committees should be improved.
- It should be integrated in the e-procurement system.

Remarks:

- In order to ensure a smooth GPP implementation process, the government should make GPP mandatory for all ministries and local governments.
- LKPP has to cooperate with the Ministry of Environment and Forestry (MoEF), since the MoEF has the authority to define green product criteria. LKPP will include green product criteria into an online catalogue that can be used for e-procurement activities across the country.
- Green product criteria for plastic and packaging products should be developed.
- From a legal point of view, the implementation of GPP for plastic and packaging products will only require a simple regulatory framework. Most importantly, regulation is required concerning green product criteria issued by the MoEF and for making GPP that includes plastic and packaging products mandatory. To provide a stronger guidance, GPP should be identified as national priority programme and integrated into the national development plan document prepared by Bappenas.
- The EU Green Public Procurement Manual on Plastic Waste Prevention (2014) is a good resource for both the government and the private sector to learn and adopt/adapt the good practices from the EU. Currently, there is a general lack of understanding of the potential of this measure in the plastic waste context.

Chapter 5. Prioritisation

The implementation of economic and fiscal measures aims at supporting the GoI's objective of addressing plastic waste pollution, as particularly mentioned in the Law No. 18 of 2008 concerning Waste Management, the Presidential Regulation No 83/2018 concerning the National Action Plan on Marine Debris Management, the Minister of Environment and Forestry Regulation No.75 of 2019 concerning the Road Map for Waste Reduction by Manufacturers, and the workplan stated in the NPAP documents. Those economic and fiscal measures are mainly focused on addressing the SUP pollution problem upstream of the plastic lifecycle by providing incentives and disincentives to boost waste prevention and the principle of reusing, reducing and recycling. Once applied, these measures are expected to promote behavioural changes and decisions of relevant actors regarding the production and consumption of SUP.

As stated in the previous section, ten economic and fiscal measures have been identified as potential measures. To prioritise those measures, an analysis was carried out to determine three priority measures. The prioritisation of those measures was conducted based on the assessment of two aspects with the same weighting:

1. the readiness of the measure application, and
2. the impact that might be achieved by implementing the measure.

The assessment of the impact aspect was carried out by taking into account the following components as described in this table:

Table 5 1. Components Considered for the Impact Level Assessment

	COMPONENT	EXPLANATION
1.	Impact on SUP reduction and recycling	How big is the estimated impact of the implementation of a measure for the reduction of SUP packaging, plastic recycling and packaging and reuse measures, including the GHG emission reduction.
2.	Encouraging upstream stakeholders.	How big is the impact of the implementation of a measure for influencing upstream stakeholders to prevent SUP packaging and to recycle plastic and packaging waste?
3.	Encouraging downstream stakeholders.	How big is the impact of the implementation of a measure for influencing downstream stakeholders to reduce SUP packaging and to recycle plastic and packaging waste?
4.	Plastic Industry development and recycling business	How big is the impact of the implementation of a measure for hindering plastic industry activities and for boosting plastic and packaging waste recycling activities?
5.	Waste management	How big is the impact of the implementation of a measure for improving the waste management system in general?
6.	Coverage Area	How wide is the area of influence of an implemented measure (national or local)?

Meanwhile, the assessment of the readiness aspect is carried out by considering the following components below:

Table 5-2. Components Considered for the Readiness Level Assessment

	COMPONENT	EXPLANATION
1.	Regulation	Are relevant regulations (including related guidance and standards) as the basis for the implementation of a measure already available? If not, what is the level of difficulty in preparing those regulations?
2.	Institution	Are the relevant institutions to implement a measure already available? If not, what is the level of difficulty to include relevant tasks and responsibilities into existing institutions?
3.	Human resources	Can existing human resources in the relevant institutions perform the implementation of a measure?
4.	Supporting infrastructures	Can the existing supporting infrastructure (equipment) in relevant institutions be easily adjusted to support the implementation of a measure?
5.	Budget availability	Can the government's budget or relevant non-government funding sources support the implementation of a measure?
6.	Complexity of Preparation and Implementation	How many stakeholders need to be involved and what is the level of difficulty in obtaining a formal approval for the implementation of a measure?

The assessment of each measure is carried out by giving a score for each aspect ranging from one to five. A detailed explanation of the different scores is given in the table below:

Table 5-3. Explanation of Scoring in Readiness Level and Impact Level

SCORE	READINESS LEVEL	IMPACT LEVEL
1.	The measure is estimated to be ready for implementation in the long term (10 years) taking into account the very complex preparatory work.	The application of the measure is estimated to have a very low impact in terms of packaging and single-use plastic prevention.
2.	The measure is estimated to be ready for implementation in the medium term (5 years) considering the complex preparatory work.	The application of the measure is estimated to have a low impact in terms of packaging and single-use plastic prevention.
3.	The measure is considered ready to be implemented in the short term (1–2 years) but requires heavy preparatory work.	The application of the measure is estimated to have a medium impact in terms of packaging and single-use plastic prevention.
4.	The measure is considered to be applicable within the short term (1–2 years) by preparing several requirements that are categorised as moderate.	The application of the measure is estimated to have a high impact in terms of packaging and single-use plastic prevention.
5.	The measure is considered ready to be implemented within the short term (1–2 years) with light and simple preparatory work.	The application of the measure is estimated to have a very high impact in terms of packaging and single-use plastic prevention.

Each measure requires certain preparatory steps for being implemented. The time needed and the level of complexity of the preparation process for each measure is determined, among others, by the number of preparatory steps required and the number of institutions involved. The preparatory steps and indications of institutions that need to be involved in each measure can be seen in the tables below.

Table 5 4. Indicated Preparation Activities for Developing Partial Grants for Recycling Investments

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development for grant provision to boost recycling industries	CMMAI, Bappenas	MoEF, MoF, MoI
2	Elaboration of potential funding sources	CMMAI, MoF, Bappenas, MoEF	BPDLH
3	Determination of special mandate for BPDLH to include plastic and packaging waste into its' eligibility sector (Ministerial Decree/KMK)	MoF	BPDLH
4	Agreement with various development partners or IFIs as potential funding sources	MoF	BPDLH
5	Institutional capacity strengthening of BPDLH	MoF	BPDLH, Development Partners
6	Concept development for business process	MoF	BPDLH, MoI, MoEF
7	Development of Guidance and Standards for Conducting Due Diligence to ensure equal treatment	MoF	BPDLH, MoI, MoEF
8	Development of Standard Operating Procedure for Grant Provision (Planning, Operation, Monitoring & Evaluation)	MoF	BPDLH
9	Agreement with national FIs to set up grant scheme to support financing facilities for recycling projects provided by FIs	MoF, OJK	BPDLH

Table 5 5. Indicated Preparation Activities for Developing Tax Incentives for Recycling Investments

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development for Tax Incentives for Recycling Investments	CMMAI, Bappenas	MoEF, MoI
2	Development of Guidance and Standards as technical basis to provide tax incentives.	CMMAI, MoF, Bappenas, MoEF	MoEF, MoI
3	Feasibility study on the integration into the national taxation system	MoF	MoEF, MoI
4	Inter-ministerial discussion	MoF	MoEF, MoI
5	Consultation with legislative body (if required)	MoF	MoEF, MoI

6	Development of basic regulation (Ministerial Decree of MoF)	MoF	MoEF, MoI
7	Integration into the Law of Tax Harmonisation (if required)	MoF	
8	Adjustment of taxation system	MoF	
9	Development of Standard Operating Procedure for tax incentives for recycling investments	MoF, OJK	MoEF, MoI
10	Institutional capacity strengthening for taxation office	MoF	MoEF, MoI
11	Dissemination to relevant stakeholders and tax payers	MoF	MoEF, MoI

Table 5-6. Indicated Preparation Activities for Developing Interest Subsidies and Soft Loans for Recycling Investments

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development for interest subsidies and soft loans for recycling investments	MoF	MoEF, MoI
2	Elaboration of potential funding sources (Development Partners and IFIs)	MoF	MoEF, MoI
3	Elaboration of potential national financial institutions as intermediaries	MoF	MoEF, MoI
4	Agreement between various development partners or IFIs as potential funding sources	MoF	MoEF, MoI
5	Development of basic regulation (if required)	MoF	MoEF, MoI
6	Development of Guidance and Standards for providing interest subsidies and soft loans via each intermediary	MoF	Financial Institutions
7	Development of Standard Operating Procedure for providing interest subsidies and soft loans via each intermediary	Financial Institutions	
8	Dissemination and capacity building for potential recycling industries to prepare a bankable proposal	MoF, MoEF, MoI	Financial Institutions

Table 5 7. Indicated Preparation Activities for Developing SUP Packaging Levies

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development for SUP packaging Levies	CMMAI, Bappenas	MoEF, MoHA
2	Elaboration of potential products as subject of levies	CMMAI, Bappenas	MoEF, MoHA
3	Elaboration of stakeholder that should be involved	CMMAI, Bappenas	MoEF, MoHA
4	Selection of local governments (LGs) for pilot projects (provincial-regency-city governments)	CMMAI, Bappenas	MoEF, MoHA
5	Development of basic regulation (ministerial decree) on SUP packaging levies	MoEF	MoI, MoHA, selected local governments
6	Development of Guidance and Standard Operating Procedure for implementing SUP packaging levies	CMMAI, Bappenas	MoI, MoHA, selected ocal governments (pilot project)
7	Capacity strengtheningfor relevant stakeholders	MoEF	Local governments (pilot project)

Table 5-8. Indicated Preparation Activities for Developing Tax Deductionsfor the Use of Recycled and Recyclable Plastic Materials

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development for Tax Incentives for using recycled and recyclable materials	MoF	MoEF, MoI, MoHA, local governments
2	Development of Guidance and Standards as technical basisfor the tax incentive	MoF	MoEF, MoI, MoHA, local governments
3	Feasibility study on the integration into the national taxation system	MoF	MoEF, MoI, MoHA, local governments
4	Inter-ministerial discussion	MoF	MoEF, MoI, MoHA, local governments
5	Consultation with legislative body (if required)	MoF	MoEF, MoI, MoHA, local governments
6	Development of basic regulation (Ministerial Decree of MoF)	MoF	MoEF, MoI, MoHA, local governments
7	Integration into Law of Tax Harmonisation (if required)	MoF	
8	Adjustment of taxation system at national and local levels	MoF	Local Governments

Table 5 9. Indicated Preparation Activities for Developing Tax Deductions for Using Reusable and Recycled Content Packaging

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development for Tax Incentives for using reusable and recycled content packaging	MoF	MoEF, MoI, MoTrade, MoHA, local governments
2	Development of Guidance and Standards as technical basis for tax incentives	MoF	MoEF, MoI, MoTrade, MoHA, local governments
3	Feasibility study on the integration into the national taxation system	MoF	MoEF, MoI, MoTrade, MoHA, local governments
4	Inter-ministerial discussion	MoF	MoEF, MoI, MoTrade, MoHA, local governments
5	Consultation with legislative body (if required)	MoF	MoEF, MoI, MoTrade, MoHA, local governments
6	Development of basic regulation (Ministerial Decree of MoF)	MoF	MoEF, MoI, MoTrade, MoHA, local governments
7	Integration into Law of Tax Harmonisation (if required)	MoF	
8	Adjustment of taxation system at national and local levels	MoF	Local Governments

Table 5 10. Indicated Preparation Activities for Developing Consumer Rebates

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development for consumer rebate	CMMAI, Bappenas	MoEF, MoTrade, MoHA
2	Elaboration of potential commercial actors that can get involved in the consumer rebate scheme.	CMMAI, Bappenas	MoEF, MoTrade, MoHA
3	Selection of local governments (LGs) as pilot projects (provincial-regency-city governments)	CMMAI, Bappenas	MoEF, MoHA
4	Development of basic regulation (ministerial decree) on consumer rebate scheme	MoEF	MoI, MoTrade, MoHA
5	Development of Guidance and Standard Operating Procedure for implementing consumer rebates	CMMAI, Bappenas	MoEF, MoI, MoTrade, MoHA

6	Agreement between the national government, local governments (pilot projects), selected commercial actors (rights, obligation, responsibility, incentive, sharing budget, etc)	CMMAI, Bappenas	MoEF, MoTrade, MoHA, ocal governments (pilot project), and selected commercial actors
7	Capacity strengthening for relevant stakeholders	MoEF	Local governments (pilot project) & selected commercial actors

Table 5 11. Indicated Preparation Activities for Developing Extended Producer Responsibility

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development and feasibility study on Extended Producer Responsibility	CMMAI, Bappenas	MoEF, MoI
2	Elaboration of potential stakeholders in EPR	CMMAI, Bappenas	MoEF, MoI
3	Selection of local governments (LGs) as pilot projects (provincial & municipal governments)	CMMAI, Bappenas	MoEF, MoI, MoHA
4	Development of basic regulation (ministerial decree) on EPR implementation	MoEF	MoI, MoI, MoHA
5	Development of Guidance and Standard Operating Procedure for implementing EPR	CMMAI, Bappenas	MoEF, MoI, MoHA, local governments (pilot project)
6	Agreement between the national government, local governments (pilot projects), and selected industries (rights, obligation, responsibility, incentive, sharing budget, etc)	CMMAI, Bappenas	MoEF, MoI, MoHA, local governments (pilot projects), selected industries, and selected commercial actors
7	Capacity strengthening for relevant stakeholders	MoEF	Local governments (pilot projects), selected industries

Table 5 12. Indicated Preparation Activities for Developing a Deposit Return System

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development for deposit return system (DRS) for reusable packaging.	CMMAI, Bappenas	MoEF, MoI, MoTrade
2	Elaboration of potential industries/producers and commercial actors that can get involved in DRS	CMMAI, Bappenas	MoEF, MoI, MoTrade

3	Selection of local governments (LGs) as pilot projects (provincial-regency-city governments)	CMMAI, Bappenas	MoEF, MoHA
4	Development of basic regulation (ministerial decree) on DRS implementation	MoEF	MoI, MoTrade, MoHA
5	Development of Guidance and Standard Operating Procedure for implementing DRS for reusable packaging products	CMMAI, Bappenas	MoEF, MoI, MoTrade, MoHA
6	Agreement between the national government, local governments (pilot project), selected industries, and selected commercial actors (rights, obligation, responsibility, incentive, sharing budget, etc)	CMMAI, Bappenas	MoEF, MoI, MoTrade, MoHA, local governments (pilot project), selected industries, and selected commercial actors
7	Capacity strengthening for relevant stakeholders	MoEF	Local governments (pilot project), selected industries, and selected commercial actors

Table 5 13. Indicated Preparation Activities for Developing Green Public Procurement

	PROPOSED PREPARATION ACTIVITIES	PROPOSED LEADING INSTITUTIONS	PROPOSED IMPLEMENTING INSTITUTIONS
1	Concept development for green public procurement (GPP) for reusable packaging and packaging with recycled content	CMMAI, Bappenas	BRIN, MoEF, MoI, MoTrade
2	Determination of special mandate for LKPP to include non-SUP packaging into GPP eligibility sector	CMMAI, Bappenas, MoEF	LKPP
3	Development of basic regulation (Decree of Head of LKPP)	LKPP	
4	Development of Guidance and Standard for GPP of non-SUP packaging products	Bappenas, MoEF	LKPP, Development Partners
5	Adjustment of GPP system within LKPP	LKPP	Related Procurement Units at national and sub-national levels
6	Development of Standard Operating Procedure of GPP for non-SUP packaging products	LKPP	Related Procurement Units at national and sub-national levels
7	Institutional capacity strengthening for LKPP	MoEF	LKPP
8	Capacity strengthening for related procurement units at national and sub-national levels	LKPP	Related Procurement Units at national and sub-national levels

Taking into account the readiness and impact evaluation of as described above and considering relevant stakeholder consultations and discussions with experts, each potential measure was assessed. The assessment results can be seen in the following table.

Table 5-14. Assessment of Each Measure Based on Readiness Level and Impact Level

NO	MEASURE	SCORE FOR READINESS LEVEL	SCORE FOR IMPACT LEVEL
1	Partial Grant for Recycling Investment	5	3
2	Tax Incentive for Recycling Investment	3	3
3	Interest Subsidy and Soft-loan for Recycling Investment	3	3
4	SUP Packaging Levies	2	4
5	Tax Deduction for the Use of Recyclable Plastic Materials	3	3
6	Tax Deduction for Using Reusable and Recycled Content Packaging	3	4
7	Consumer Rebate	3	3
8	Extended Producer Responsibility	2	3
9	Deposit Return System	4	3
10	Green Public Procurement	4	4

An overview of the position of each measure relative to other measures can be seen in the figure below.

Figure 5-1. Position of Each Measure Based on Readiness Level and Impact Level

Based on the figure above and the respective assessment of the readiness and impact levels, the following three priority measures were identified:

1. Measure No.1: Partial Grant for Recycling Investment
2. Measure No. 9: Deposit Return System
3. Measure No.10: Green Public Procurement

Chapter 6. Looking Ahead

6.1 Partial Grant for Recycling Investment

Although the partial grant for recycling investments is considered a low hanging fruit that can be implemented within a short period of time, there are several preparatory steps that need to be taken with care. The preparation of the initial concept can be carried out by the MoEF or MoF before being followed up more technically by BPDLH.

From the institutional point of view, the application of this measure does not require the establishment of a new institution. BPDLH as a public service agency (BLU) under the MoF, which is deemed adequate and eligible for implementing this measure. To ensure a smooth implementation process, BPDLH needs to have a mandate for single-use plastic and packaging prevention. It also needs to develop guidelines for planning, implementation, monitoring, and evaluation.

Some of the BPDLH staff come from a BLU under the MoEF. Therefore, from technical point of view, they are familiar with and capable of overseeing its implementation. The coordination with the MoEF as one of the leading institutions will be smooth. However, BPDLH needs to establish a strong coordination with other related ministries (CMMAI, Bappenas, and MoI).

To mobilise non-government funding sources and technical assistance support, BPDLH needs to communicate with different development partners, especially those who are aware of the single-use plastics issue in Indonesia such as The World Bank, Green Climate Fund (GCF), GIZ, KfW, WRI, GGGI, etc. To expedite communication with non-government stakeholders (e.g., plastic producers and converters, recycling industries, and think tanks), BPDLH must get actively involved in the National Plastic Action Plan (NPAP) Platform.

The involvement in NPAP is also aimed at elaborating the potential market for recycled plastic products and developing strategies to boost the domestic market. In addition, BPDLH needs to communicate with potential national financial institutions to elaborate the potential combination of partial grant products with various financing facility products to enhance recycling industries. The partial grant measure can be considered as a de-risking measure and a credit enhancement facility.

BPDLH can channel this facility both to national large-scale companies and to local small-scale companies. In terms of supporting local small-scale companies, BPDLH can cooperate with financial institutions at the local level (Regional Development Banks) located in most provinces in Indonesia.

6.2 Deposit Return System

The initial DRS concept development needs to involve the MoEF, MoI and MoTrade with support from Bappenas and CMMAI. The drafting of the concept note needs to get input from non-government stakeholders, particularly relevant industries and commercial actors. In addition, if the implementation is carried out in stages, starting with implementation in several pilot cities or provinces, the MoHA and relevant local governments need to be involved. At first, it is recommended to launch DRS for reusable packaging, which should be clearly stated in the concept note.

Within a limited scope, several industries supported by relevant commercial actors have already implemented this system in some cities in Indonesia. To create a more systemic DRS implementation, a collaboration among government and non-government stakeholders needs to be strengthened. The NPAP platform could be used to discuss and elaborate the DRS concept and its' potential implementation. To promote the concept to a wider range of stakeholders, the government can use the NPAP as a vehicle for dissemination, especially to non-government stakeholders.

DRS implementation will be more coordinated at the local level, so it needs to be supported by the local governments, particularly at the city level. To expedite its' implementation, the national government should strengthen the institutional and human resources of the local government. The mobilisation of technical assistance provided by various development partners could be carried out using the NPAP platform.

An important aspect that needs to be considered to effectively commence the DRS implementation is the availability of collection points for reusable packaging. It requires a strong cooperation between the government, industries, and commercial actors. The budget of the national government (Ministry of Environment and Forestry and Ministry of Public Works) and the local governments could be mobilised to establish collecting points and a reverse logistic system for supporting DRS implementation.

6.3 Green Public Procurement

Green Public Procurement (GPP) aims to boost sustainable consumption and production by promoting environmentally friendly goods/services procurement within the public sector. Led by the MoEF, the GPP implementation requires the involvement of various stakeholders, among others LKPP, all ministries, other national agencies, provincial governments, as well as local governments.

In 2019, the MoEF enacted Ministerial Regulation No. 5 of 2019 concerning Procedures for Applying Environmentally Friendly Labels for Green Procurement. There are six categories of environmentally friendly goods and services according to the regulation: photocopy paper, stationery/file folders made of recycled plastic, Timber Legality Assurance System–certified wooden furniture (SVLK), air conditioning devices, microwaves (a medical waste processing technology product for health care facilities), and autoclave (a medical waste processing technology product for health care facilities). The regulation was followed up by a LKPP regulation providing technical guidance for the implementation in all public institutions.

To advance SUP and packaging prevention, GPP could be extended to include reusable and recycled content packaging into its definition of a green product and it could become mandatory in public procurement[11]. The concept note for this idea could be prepared by the MoEF with support from the MoI, the Ministry of Trade (MoTrade) and the National Research and Innovation Agency (BRIN). After the preparation stage, LKPP will lead and coordinate its implementation. The mandatory introduction of GPP related to reusable and recycled content plastic and packaging could significantly influence the reduction of SUP in the entire public spending process.

[11] *The promotion of reusable packaging in food and beverage delivery services has been pilot tested in DKI Jakarta Province in the context of the CAP SEA project (DKI Jakarta City' Reusable Packaging Baseline Research Study on Food Delivery | Knowledge Hub for Green Technologies (greentechknowledgehub.de)) and GREEN PUBLIC PROCUREMENT (GPP) – Pusfaster BSILHK (menlhk.go.id)*

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